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THE ENRICO FERMI INSTITUTE
FOR NUCLEAR STUDIES

July 13, 1956

Dr. W. F. Libby
U. S. Atomic Energy Commission
Washington 25, D. C.

Dear Bill:

I have enclosed a summary of results that the Nuclear Science and Engineering Corporation obtained for 26 Rongelap Atoll resurvey samples. I am not in a position to comment on the results since I do not have complete sample information. The NRDL sample description information is also enclosed. I have confidence in the NSEC activity data, but I have advised NRDL to recheck the reasonableness of the calcium concentrations based on their experience for similar samples.

The data for the four Brawley, California plant samples which were collected on January 5, 1956 are listed below.

CL No.	Plant Type	Sr^{90}, S.U.
1059-P	Lettuce	0.39 ± 0.05
1060-P	Brocolli	0.25 ± 0.08
1061-P	Peas	1.34 ± 0.08
1062-P	Alfalfa	2.13 ± 0.22

The results show the low concentrations we would expect in view of the low soil level. The large variations in Sunshine Units for these plant samples are not surprising considering variations in root depth and period of growth and the possible wide scatter of Sr^{90} distribution in dry areas.

My secretary and I are in the process of compiling Chicago Bulletin No. 12, which will be the final report we make before closing out the lab.

Sincerely yours,

Ed

E. A. Martell

Enclosures

Nuclear Science and Engineering Corporation

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Sr^{90} ANALYSIS REPORT ON 26 NRDL SAMPLES

CL Sample No.	NRDL No.	Part	g Ca in Sample	dpm in Sample	S. U.
1072	737		0.080	44.3 ± 3.8	251 ± 24
1073A	1052C	muscle	0.030	3.0 ± 0.7	4.6 ± 1.2
1073B	1052C	gill	0.051	18.5 ± 1.5	164 ± 13
1073C	1052C	bone	0.330	6.9 ± 0.8	9.6 ± 1.1
1073D	1052C	head	0.209	7.1 ± 1.0	15.5 ± 2.2
1074	1509		0.159	3.7 ± 1.0	10.6 ± 3.0
1075	1513		0.031	1750 ± 70	$(2.57 \pm 0.10) \times 10^4$
1076A	1538	bone	0.465	18.8 ± 1.0	18.4 ± 1.1
1076B	1538	viscera	0.263	21.3 ± 1.4	36.8 ± 2.9
1076C	1538	skin	0.273	20.2 ± 1.8	33.6 ± 3.3
1076D	1538	head	0.415	15.2 ± 0.9	16.7 ± 1.1
1077A	1544	head	1.42	39.2 ± 3.1	12.5 ± 1.0
1077B	1544	bone	1.30	205 ± 9	71.6 ± 3.9
1077C	1544	skin	1.22	19.1 ± 1.7	7.1 ± 0.7
1077D	1544	gill	0.125	3.4 ± 0.4	12.5 ± 1.8
1078A	1621	head	1.74	32.2 ± 2.6	8.4 ± 0.7
1078B	1621	muscle	0.435	8.1 ± 2.1	8.5 ± 2.2
1079	1629		0.475	70.3 ± 4.9	67.3 ± 5.4
1080	1630		0.860	42.7 ± 5.1	22.6 ± 2.8
1081	1638		0.448	329 ± 23	334 ± 26
1082	842	9.22g soil	3.17	5800 ± 290	830 ± 42
1083	847	10.88g soil	2.04	0.63 ± 0.24	0.14 ± 0.05
1084	580	1.02g ash	0.231	40.2 ± 2.0	79.0 ± 4.7
1085	524	0.438g ash	N.D. .02%*	3.84 ± 0.19	19800
1086	1027	87 ml water	.032*	2.2† ± 0.7	0.025 ± 0.008 31±10
1087	1028	91 ml water	.032†	1.5 ± 0.2	0.016 ± 0.002 20±3

*Ca, .03% limit.

List of Samples for Sr^{90} Analysis

NRDL No.	Name of Animal	Tissue	Wet wt.	Ash wt.	Sample Aliquot
737	Helmet Crab		271 gm.		25/125
1502 C	Goat	Muscle	87 gm.		10/50
	Fish	Gill	12 gm.		10/50
		Bone	29 gm.		25/100
		Head	26 gm.		10/50
1509	Killer Clam				25/100
1513	Killer Clam		882 gm.		50/250
1538	Red	Bone	141 gm.		25/250
	Snapper	Viscera	98 gm.		10/250
	Fish	Skin	89 gm.		50/250
		Head	60 gm.		50/250
1544	Green &	Head	280 gm.		100/1000
	Red	Bone	176 gm.		50/250
	Parrot	Skin	223 gm.		50/250
	Fish	Gill	56 gm.		10/50
1621	Snapper	Head	219 gm.		100/500
	Fish	Muscle	511 gm.		25/100
1629	Sand Crab		46 gm.		25/125
1630	Grouper Fish		169 gm.		50/250
1638	Spider Snail		56 gm.		25/250
842	Soil				
847	Soil				
580	Arrow Root		305	5.239	$\frac{1.012}{5.239}$
524	Coconut Meat		450	1.448	$\frac{0.437}{1.448}$
1027	Water, Ocean				
1028	Water, Lagoon				