Environmental Radiological Studies
Conducted During 1986 in the Vicinity of the
Rancho Seco Nuclear Power Generating Station

Appendices

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APPENDIX I
Concentrations of Radionuclides in Fish

Table I-1. Concentrations of radionuclides in flesh of fish caught in 1986, 0.5 km (Station RS-17) from the plant outfall. (Number in parenthesis is the 1 sigma counting error expressed as percentage of the value listed; "< dl" means less than detection limits.)

Sample ID	Date collected	Common name	Dry/wet wt	pCi/g wet wt		
				134Cs	137Cs	40K
k346	4/8/86	Carp	0.197	0.23(5)	0.84(1)	2.6(6)
k348	4/8/86	Largemouth bass	0.181	0.11(19)	0.31(7)	2.7(20)
k410	6/1/86	Bluegill	0.209	0.22(23)	0.87(5)	< dl
k411	6/1/86	Catfish	0.193	0.29(6)	0.97(2)	2.7(9)
k412	6/1/86	Bluegill	0.200	0.33(6)	1.19(2)	3.4(7)
k413	6/1/86	Largemouth bass	0.224	0.27(4)	1.01(2)	3.2(5)
k450	7/9/86	Bluegill	0.200	0.15(17)	0.65(4)	3.2(13)
k452	7/9/86	Largemouth bass	0.211	0.22(10)	0.87(3)	3.7(8)
k511	8/14/86	Bluegill	0.208	0.15(14)	0.58(5)	3.8(13)
k512	8/14/86	Largemouth bass	0.216	0.29(4)	1.17(2)	3.7(4)
k558	9/17/86	Bluegill	0.209	0.08(17)	0.34(5)	2.9(10)
k559	9/17/86	Largemouth bass	0.207	0.31(21)	1.28(6)	5.2(22)
k637	10/28/86	Largemouth bass	0.206	0.07(23)	0.38(5)	3.2(7)
k638	10/28/86	Bluegill	0.214	0.08(21)	.6(5)	3.5(9)

Table I-2. Concentrations of radionuclides in flesh of fish caught in 1986, 0.5 km (Station RS-30*) from the plant outfall. (Number in parenthesis is the 1 sigma counting error expressed as percentage of the value listed.)

Sample ID	Date collected	Common name	Dry/wet wt	pCi/g wet wt		
				134Cs	137Cs	40K
k342	4/8/86	Largemouth bass	0.201	0.81(2)	3.08(1)	3.3(6)
k343	4/8/86	Bluegill	0.196	0.27(4)	1.03(1)	3.1(7)
k508	8/14/86	Largemouth bass	0.209	0.43(4)	1.96(2)	3.5(7)
k509	8/14/86	Bluegill	0.198	0.19(6)	0.88(2)	3.7(5)
k557	9/17/86	Largemouth bass	0.213	0.43(3)	1.83(1)	3.4(6)
k634	10/28/86	Largemouth bass	0.206	0.40(14)	1.75(7)	4.6(20)
k635	10/28/86	Bluegill	0.201	0.11(37)	0.63(12)	3.0(23)
k636	10/28/86	Carp	0.231	0.48(6)	2.32(2)	3.5(10)

* RS-30 is a sump connected by underground pipe with RS-17.

Table I-3. Concentrations of radionuclides in flesh of fish caught in 1986, 0.9 km (Station RS-15) from the plant outfall. (Number in parenthesis is the 1 sigma counting error expressed as percentage of the value listed; "< dl" means less than detection limits.)

Sample ID	Date collected	Common name	Dry/wet wt	pCi/g wet wt		
				134Cs	137Cs	40K
k633	10/29/86	Bluegill	0.221	< dl	0.42(26)	< dl
k632*	10/29/86	Bluegill	0.215	< dl	0.43(30)	< dl
k631*	10/29/86	Largemouth bass	0.212	< dl	0.29(14)	< dl

* Fish caught 0.9 km downstream of RS-15.

Table I-4. Concentrations of radionuclides in flesh of fish caught in 1986, 3.0 km (Station T-1) from the plant outfall. (Number in parenthesis is the 1 sigma counting error expressed as percentage of the value listed; "< dl" means less than detection limits.)

Sample ID	Date collected	Common name	Dry/wet wt	pCi/g wet wt		
				134Cs	137Cs	40K
k341	4/8/86	Bluegill	0.212	0.28(5)	1.05(2)	3.3(5)
k402	6/2/86	Bluegill	0.197	0.66(3)	2.64(1)	2.3(16)
k403	6/2/86	Bluegill	0.204	0.10(9)	0.38(3)	3.3(5)
k404	6/2/86	Catfish	0.188	0.2(46)	0.46(18)	5.1(30)
k405	6/2/86	Largemouth bass	0.210	< dl	0.82(20)	< dl
k447	7/9/86	Largemouth bass	0.212	0.14(9)	0.52(3)	3.8(5)
k448	7/9/86	Bluegill	0.194	0.24(8)	0.89(3)	3.3(7)
k449	7/9/86	Catfish	0.182	0.07(42)	0.27(11)	2.9(15)
k505	8/13/86	Bluegill	0.206	0.16(9)	0.67(3)	3.3(6)
k506	8/13/86	Largemouth bass	0.215	0.15(6)	0.65(2)	3.7(4)
k507	8/13/86	Catfish	0.187	< dl	0.28(30)	5.9(32)
k553	9/17/86	Bluegill	0.205	0.13(10)	0.61(3)	3.5(6)
k554	9/17/86	Largemouth bass	0.208	0.16(5)	0.73(2)	3.4(2)
k555	9/17/86	Catfish	0.180	< dl	0.27(12)	2.9(21)
k629	10/28/86	Bluegill	0.209	0.07(13)	0.34(4)	3.7(5)
k630	10/28/86	Largemouth bass	0.212	0.11(7)	0.52(2)	3.3(4)

Table I-5. Concentrations of radionuclides in flesh of fish caught in 1986, 4.6 km (Station R-5) from the plant outfall. (Number in parenthesis is the 1 sigma counting error expressed as percentage of the value listed; "< dl" means less than detection limits.)

Sample ID	Date collected	Common name	Dry/wet wt	pCi/g wet wt		
				134Cs	137Cs	40K
k338	4/7/86	Largemouth bass	0.214	< dl	0.21(10)	2.1(22)
k339	4/7/86	Bluegill	0.220	0.17(5)	0.61(2)	3.7(4)
k340	4/7/86	Catfish	0.182	0.28(3)	1.01(2)	3.6(3)
k399	6/2/86	Largemouth bass	0.209	0.17(14)	0.64(2)	3.6(6)
k400	6/2/86	Bluegill	0.206	< dl	0.22(11)	4.7(13)
k401	6/2/86	Catfish	0.183	0.21(8)	0.89(3)	4.2(7)
k406	6/2/86	Bluegill	0.203	< dl	0.20(12)	3.4(15)
k407	6/2/86	Largemouth bass	0.203	< dl	0.45(25)	< dl
k408	6/2/86	Catfish	0.189	0.54(4)	2.12(2)	3.6(6)
k445	7/9/86	Bluegill	0.203	0.04(27)	0.21(6)	3.3(6)
k446	7/9/86	Largemouth bass	0.204	< dl	0.30(18)	5.3(18)
k495	8/13/86	Largemouth bass	0.206	0.10(20)	0.35(8)	3.8(10)
k496	8/13/86	Bluegill	0.201	0.07(13)	0.31(4)	3.3(5)
k551	9/16/86	Bluegill	0.200	0.05(15)	0.24(5)	3.4(5)
k552	9/16/86	Largemouth bass	0.207	0.52(3)	2.21(1)	3.7(4)
k625	10/27/86	Largemouth bass	0.207	0.02(17)	0.38(5)	3.5(10)

Table I-5 (continued).

Sample ID	Date collected	Common name	Dry/wet wt	pCi/g wet wt		
				¹³⁴ Cs	¹³⁷ Cs	40K
k626	10/27/86	Bluegill	0.207	0.05(8)	0.27(3)	3.2(4)
k627	10/27/86	Catfish	0.192	0.11(14)	0.54(4)	3.9(8)
k628	10/27/86	Carp	0.221	0.21(6)	0.98(6)	3.3(5)

Table I-6. Concentrations of radionuclides in flesh of fish caught in 1986, 6.0 km (Station R-52) from the plant outfall. (Number in parenthesis is the 1 sigma counting error expressed as percentage of the value listed.)

Sample ID	Date collected	Common name	Dry/wet wt	pCi/g wet wt		
				¹³⁴ Cs	¹³⁷ Cs	⁴⁰ K
k510	8/13/86	Catfish	0.191	0.05(21)	0.18(7)	2.8(7)

Table I-7. Concentrations of radionuclides in flesh of fish caught in 1986, 6.3 km (Station R-7) from the plant outfall. (Number in parenthesis is the 1 sigma counting error expressed as percentage of the value listed; "< dl" means less than detection limits.)

Sample ID	Date collected	Common name	Dry/wet wt	pCi/g wet wt		
				¹³⁴ Cs	¹³⁷ Cs	⁴⁰ K
k556	9/17/86	Largemouth bass	0.209	< dl	0.22(10)	3.5(12)

Table I-8. Concentrations of radionuclides in flesh of fish caught in 1986, 7.5 km (Station T-2) from the plant outfall. (Number in parenthesis is the 1 sigma counting error expressed as percentage of the value listed; "< dl" means less than detection limits.)

Sample ID	Date collected	Common name	Dry/wet wt	pCi/g wet wt		
				134Cs	137Cs	40K
k344	4/8/86	Largemouth bass	0.151	0.10(16)	0.35(2)	3.5(10)
k345	4/8/86	Bluegill	0.198	< dl	0.05(15)	2.3(10)
k397	6/2/86	Largemouth bass	0.205	< dl	0.13(11)	2.9(10)
k398	6/2/86	Bluegill	0.197	0.02(22)	0.06(8)	3.1(4)
k444	7/7/86	Bluegill	0.202	0.01(36)	0.02(15)	2.2(4)
k451	7/7/86	Largemouth bass	0.209	0.13(4)	0.50(2)	2.5(3)
k492	8/13/86	Catfish	0.185	< dl	0.19(13)	3.3(10)
k493	8/13/86	Largemouth bass	0.211	0.03(16)	0.13(4)	3.6(3)
k494	8/13/86	Bluegill	0.201	0.03(36)	0.08(10)	3.8(5)
k549	9/17/86	Bluegill	0.256	0.02(30)	0.07(20)	3.5(3)
k550	9/17/86	Catfish	0.186	0.06(20)	0.29(5)	3.0(7)
k622	10/29/86	Bluegill	0.213	< dl	0.06(22)	3.9(5)
k623	10/29/86	Largemouth bass	0.209	< dl	0.10(15)	3.6(6)
k624	10/29/86	Catfish	0.187	< dl	0.10(12)	3.0(9)

Table I-9. Concentrations of radionuclides in flesh of fish caught in 1986, 10.2 km (Station T-3) from the plant outfall. (Number in parenthesis is the 1 sigma counting error expressed as percentage of the value listed; "< dl" means less than detection limits.)

Sample ID	Date collected	Common name	Dry/wet wt	pCi/g wet wt		
				¹³⁴ Cs	¹³⁷ Cs	40K
k396	6/3/86	Bluegill	0.199	0.02(23)	0.05(12)	3.0(4)
k441	7/7/86	Bluegill	0.193	< dl	0.03(27)	3.5(15)
k442	7/7/86	Largemouth bass	0.210	< dl	0.12(12)	3.6(10)
k443	7/7/86	Catfish	0.198	< dl	0.23(40)	< dl
k489	8/12/86	Largemouth bass	0.211	< dl	0.04(29)	3.0(8)
k490	8/12/86	Bluegill	0.196	< dl	0.05(37)	3.1(12)
k491	8/12/86	Catfish	0.194	< dl	0.07(25)	3.0(13)
k547	9/16/86	Bluegill	0.197	< dl	0.03(18)	3.3(5)
k548	9/16/86	Largemouth bass	0.215	< dl	0.03(11)	3.8(3)
k619	10/27/86	Carp	0.212	0.008(39)	0.056(7)	3.4(3)
k620	10/27/86	Bluegill	0.203	0.013(36)	0.021(23)	3.2(4)
k621	10/27/86	Largemouth bass	0.214	0.018(24)	0.074(6)	3.4(3)

Table I-10. Concentrations of radionuclides in flesh of fish caught in 1986, 12.6 km (Station R-8) from the plant outfall. (Number in parenthesis is the 1 sigma counting error expressed as percentage of the value listed; "< dl" means less than detection limits.)

Sample ID	Date collected	Common name	Dry/wet wt	pCi/g wet wt		
				134Cs	137Cs	40K
k336	4/9/86	Bluegill	0.148	< dl	0.05(20)	2.8(9)
k337	4/9/86	Catfish	0.180	< dl	< dl	3.1(10)
k392	5/29/86	Channel catfish	0.203	0.03(32)	0.09(8)	2.9(5)
k393	5/29/86	Bluegill	0.194	< dl	0.03(10)	1.5(11)
k394	5/29/86	Catfish	0.189	0.02(34)	0.04(12)	3.7(12)
k395	5/29/86	Largemouth bass	0.212	0.01(40)	0.06(9)	3.5(9)
k438	7/7/86	Bluegill	0.195	< dl	0.033(7)	3.1(3)
k439	7/7/86	Largemouth bass	0.218	0.02(15)	0.052(6)	3.3(2)
k440	7/7/86	Catfish	0.191	< dl	0.09(38)	2.6(26)
k475	8/12/86	Bluegill	0.201	< dl	0.03(16)	3.2(4)
k476	8/12/86	Largemouth bass	0.220	< dl	0.03(23)	3.6(4)
k542	9/15/86	Bluegill	0.226	< dl	0.02(15)	3.2(3)
k543	9/15/86	Largemouth bass	0.231	0.02(21)	0.05(5)	3.4(2)
k544	9/15/86	Catfish	0.189	< dl	0.04(16)	3.5(4)
k616	10/27/86	Bluegill	0.200	< dl	0.02(15)	3.6(3)
k617	10/27/86	Largemouth bass	0.210	< dl	0.05(9)	3.5(4)
k618	10/27/86	Catfish	0.186	< dl	0.05(9)	3.3(4)

Table I-11. Concentrations of radionuclides in flesh of fish caught in 1986, 15.4 km (Station R-22) from the plant outfall. (Number in parenthesis is the 1 sigma counting error expressed as percentage of the value listed; "< dl" means less than detection limits.)

Sample ID	Date collected	Common name	Dry/wet wt	pCi/g wet wt		
				134Cs	137Cs	40K
k486	8/15/86	Largemouth bass	0.215	< dl	0.06(11)	3.7(4)
k487	8/15/86	Bluegill	0.201	< dl	0.02(22)	3.4(5)
k488	8/15/86	Catfish	0.186	< dl	0.03(26)	3.4(5)
k540	9/18/86	Bluegill	0.200	< dl	0.02(34)	3.5(6)
k541	9/18/86	Largemouth bass	0.216	< dl	0.04(12)	3.9(3)

Table I-12. Concentrations of radionuclides in flesh of fish caught in 1986, 17.2 km (Station T-4) from the plant outfall. (Number in parenthesis is the 1 sigma counting error expressed as percentage of the value listed; "< dl" means less than detection limits.)

Sample ID	Date collected	Common name	Dry/wet wt	pCi/g wet wt		
				¹³⁴ Cs	¹³⁷ Cs	⁴⁰ K
k390	6/2/86	Largemouth bass	0.223	0.02(30)	0.08(7)	3.2(4)
k391	6/2/86	Bluegill	0.199	< dl	0.03(21)	3.6(4)
k480	8/15/86	Bluegill	0.196	< dl	0.01(34)	3.6(4)
k481	8/15/86	Largemouth bass	0.211	< dl	0.02(15)	3.4(3)
k538	9/15/86	Bluegill	0.202	< dl	0.02(17)	3.4(3)
k539	9/15/86	Largemouth bass	0.207	< dl	0.01(16)	3.3(2)

Table I-13. Concentrations of radionuclides in flesh of fish caught in 1986, 19.5 km (Station R-11) from the plant outfall. (Number in parenthesis is the 1 sigma counting error expressed as percentage of the value listed; "< dl" means less than detection limits.)

Sample ID	Date collected	Common name	Dry/wet wt	pCi/g wet wt		
				134Cs	137Cs	40K
k381	6/3/86	Channel catfish	0.210	< dl	< dl	2.6(12)
k382	6/3/86	Largemouth bass	0.202	< dl	0.05(33)	2.1(26)
k383	6/3/86	Bluegill	0.204	< dl	0.02(43)	2.6(8)
k384	6/3/86	Catfish	0.187	< dl	0.02(34)	3.0(5)
k435	7/7/86	Largemouth bass	0.208	< dl	0.01(23)	3.0(13)
k436	7/7/86	Bluegill	0.197	< dl	0.02(43)	4.1(5)
k437	7/7/86	Catfish	0.191	< dl	< dl	3.0(4)
k464	8/11/86	Bluegill	0.196	< dl	< dl	2.9(7)
k465	8/11/86	Catfish	0.185	< dl	0.01(35)	3.5(3)
k466	8/11/86	Channel catfish	0.198	< dl	< dl	3.7(13)
k536	9/15/86	Largemouth bass	0.208	< dl	0.01(30)	3.6(2)
k537	9/15/86	Bluegill	0.202	< dl	< dl	3.6(6)

APPENDIX II

Concentrations of Radionuclides in Frog Legs

Table II-1. Concentrations of radionuclides in flesh of frog legs collected during 1986. (Number in parenthesis is the 1 sigma counting error expressed as percentage of the value listed; "< dl" means less than detection limits.)

Sample ID	Station ID	Distance downstream	Date collected	Dry/wet wt	pCi/g wet wt		
		(km)			40K	134Cs	137Cs
k371	R-8	12.6	4/7/86	0.212	2.9(7)	< dl	0.05(17)
k372	T-2	7.5	4/7/86	0.188	2.3(40)	< dl	0.11(29)
k376	RS-30	0.5	4/7/86	0.188	2.5(5)	0.086(8)	0.33(2)
k374	R-4	4.2	5/10/86	0.214	2.7(6)	0.084(9)	0.31(3)
k378	RS-17	0.5	5/10/86	0.178	4.2(12)	0.11(30)	0.36(8)
k380	R-8	12.6	6/2/86	0.183	3.3(6)	< dl	0.02(33)
k409	RS-17	0.5	6/2/86	0.178	3.0(17)	< dl	0.16(20)
k414	RS-17	0.5	6/2/86	0.201	2.3(10)	0.10(17)	0.40(5)
k515	R-4	4.2	6/8/86	0.176	1.8(10)	0.02(38)	0.13(10)
k516	T-2	7.5	6/8/86	0.179	2.3(3)	< dl	0.03(14)
k517	T-2	7.5	7/7/86	0.196	2.8(5)	0.02(38)	0.07(9)
k589	R-8	12.6	7/7/86	0.188	2.9(6)	< dl	< dl
k591	R-4	4.2	7/7/86	0.186	2.4(16)	< dl	0.14(22)
k592	RS-17	0.5	7/7/86	0.191	2.9(6)	0.21(6)	0.86(2)
k518	R-8	12.6	8/12/86	0.199	1.7(25)	< dl	< dl
k519	T-2	7.5	8/12/86	0.200	2.4(6)	0.03(31)	0.13(16)
k520	R-5	4.6	8/12/86	0.185	2.8(10)	< dl	0.11(15)
k521	RS-17	0.5	8/12/86	0.207	< dl	0.12(30)	0.40(10)
k531	R-8	12.6	9/18/86	0.201	2.8(5)	< dl	0.03(21)
k532	T-2	7.5	9/15/86	0.189	2.3(6)	< dl	0.01(35)
k533	R-4	4.2	9/15/86	0.203	2.9(16)	< dl	0.15(15)
k534	RS-30	0.5	9/15/86	0.218	3.3(7)	0.15(10)	0.63(3)
k610	R-8	12.8	10/29/86	0.209	2.5(12)	< dl	< dl
k611	T-2	7.5	10/29/86	0.212	2.2(6)	0.01(44)	0.03(26)
k612	R-4	4.2	10/29/86	0.189	2.8(9)	0.04(34)	0.19(17)
k613	RS-30	0.5	10/29/86	0.208	< dl	0.02(38)	0.16(11)
k614	RS-17	0.5	10/29/86	0.206	2.2(30)	0.13(35)	0.54(11)
k615	RS-24	0.0	10/29/86	0.215	2.3(20)	0.08(36)	0.29(11)

APPENDIX III
Concentrations of Radionuclides in Crayfish

Table III-1. Concentrations of radionuclides in the flesh of crayfish collected during 1986. (Number in parenthesis is the 1 sigma counting error expressed as percentage of the value listed; "< dl" means less than detection limits.)

Sample ID	Station ID	Distance downstream (km)	Date collected	Dry/wet wt	pCi/g wet wt	
					¹³⁴ Cs	¹³⁷ Cs
k373	T-2	7.5	4/7/86	0.181	< dl	< dl
k375	R-4	4.2	5/9/86	0.208	< dl	0.53(21)
k377	RS-17	0.5	5/9/86	0.188	0.27(35)	0.62(18)
k379	R-8	12.6	6/1/86	0.193	< dl	0.03(14)
k588	RS-17	0.5	6/4/86	0.196	< dl	0.89(16)
k587	R-4	4.2	6/10/86	0.211	< dl	0.41(21)
k586	T-2	7.5	6/13/86	0.205	< dl	< dl
k590	R-8	12.6	7/8/86	0.191	< dl	0.03(30)
k546	T-2	7.5	7/10/86	0.232	< dl	< dl
k545	R-8	12.6	9/16/86	0.173	< dl	0.06(40)

APPENDIX IV
Concentrations of Radionuclides in Water Samples

Table IV-1. Concentrations of ^{134}Cs and ^{137}Cs in water samples* collected downstream of Rancho Seco during 1986. (Number in parenthesis is the 1 sigma counting error expressed as percentage of the value listed; "< dl" means less than detection limits.)

Station ID	Distance downstream (km)	Date sampled	Concentration ($\mu\text{Ci/l}$)			
			^{134}Cs		^{137}Cs	
			pre-filter	solution	pre-filter	solution
R-5	4.6	4/7/86	0.06(34)	0.06(15)	0.18(11)	0.27(4)
RS-17	0.5	5/29/86	0.044(23)	< dl	0.17(7)	0.06(22)
T-1	3.0	5/29/86	0.05(22)	0.047(8)	0.30(5)	0.257(2)
R-5	4.6	5/29/86	0.11(10)	0.057(11)	0.40(3)	0.211(4)
T-2	7.5	5/29/86	< dl	0.022(33)	0.11(10)	0.116(9)
T-3	10.2	5/29/86	< dl	< dl	0.09(15)	0.055(16)
R-8	12.6	5/29/86	< dl	< dl	0.04(31)	0.05(17)
T-4	17.2	5/29/86	< dl	0.02(39)	0.07(20)	0.027(32)
R-11	19.5	5/29/86	< dl	< dl	< dl	0.023(38)
RS-17	0.5	7/10/86	0.21(8)	0.013(50)	0.86(3)	0.044(19)
T-1	3.0	7/9/86	0.074(10)	0.029(13)	0.26(3)	0.149(3)
R-5	4.6	7/9/86	0.05(21)	0.011(80)	0.18(6)	0.101(9)
T-2	7.5	7/8/86	< dl	< dl	0.01(40)	< dl
T-3	10.2	7/8/86	0.019(28)	< dl	0.06(8)	0.046(15)
R-8	12.8	7/8/86	0.006(26)	< dl	0.02(8)	0.031(25)
R-11	19.5	7/7/86	< dl	< dl	< dl	< dl
RS-17	0.5	8/11/86	0.004(40)	0.011(46)	0.04(6)	0.036(19)
T-1	3.0	8/11/86	0.055(4)	0.019(27)	0.33(2)	0.128(6)
R-5	4.6	8/11/86	0.028(9)	0.032(22)	0.16(3)	0.140(7)
T-2	7.5	8/11/86	0.007(35)	0.006(96)	0.05(7)	0.057(14)
T-3	10.2	8/11/86	0.03(9)	0.011(47)	0.19(3)	0.033(22)
R-8	12.8	8/11/86	no sample	0.006(71)	no sample	0.024(23)
R-22	15.4	8/11/86	0.006(22)	0.009(57)	0.03(5)	0.018(33)
R-11	19.5	8/11/86	0.003(64)	< dl	0.004(54)	< dl
RS-17	0.5	9/17/86	0.006(30)	0.013(36)	0.034(7)	0.078(9)
T-1	3.0	9/17/86	0.018(17)	0.032(11)	0.118(5)	0.206(3)
R-5	4.6	9/15/86	0.01(20)	0.012(24)	0.039(7)	0.090(4)
T-2	7.5	9/16/86	0.013(25)	0.012(25)	0.061(7)	0.052(7)
T-3	10.2	9/16/86	0.003(65)	< dl	0.012(22)	0.021(25)

Table IV-1. (continued).

Station ID	Distance downstream (km)	Date sampled	Concentration (pCi/l)			
			¹³⁴ Cs		¹³⁷ Cs	
			pre-filter	solution	pre-filter	solution
R-8	12.8	9/15/86	0.007(43)	< dl	0.015(28)	0.015(50)
R-22	15.4	9/15/86	0.01(24)	< dl	0.032(9)	0.032(28)
R-11	19.5	9/15/86	< dl	< dl	0.005(39)	< dl
RS-17	0.5	10/28/86	0.007(20)	0.004(52)	0.039(5)	0.044(6)
RS-5	1.8	10/28/86	0.042(4)	0.016(24)	0.281(1)	0.112(5)
RS-1	2.3	10/28/86	0.036(15)	0.017(32)	0.21(5)	0.079(9)
T-1	3.0	10/28/86	0.026(5)	0.015(18)	0.163(2)	0.105(4)
R-5	4.6	10/27/86	0.011(32)	0.010(25)	0.049(10)	0.071(5)
T-2	7.5	10/29/86	0.003(80)	0.025(22)	0.052(6)	0.116(6)
T-3	10.2	10/27/86	0.006(25)	< dl	0.016(11)	0.026(23)
R-8	12.8	10/27/86	0.007(34)	< dl	0.028(12)	0.037(18)
R-S3	R.S. Lake	5/29/86	< dl	< dl	< dl	0.007(70)
K-1	Skunk Creek	9/15/86	< dl	< dl	0.013(17)	< dl

* Water samples were filtered through 1-micron pre-filters. Pre-filters and water analyzed separately.

Table IV-2. Concentrations of radionuclides in miscellaneous water samples* collected from the vicinity of Rancho Seco in 1986. ("< dl" means less than detection limits.)

Sample description	Date sampled	Concentration (pCi/l)	
		¹³⁴ Cs	¹³⁷ Cs
Gudgel Ranch groundwater	8/27/86	< dl	< dl
Marciel Ranch groundwater	8/27/86	< dl	< dl

* Water samples were unfiltered. Groundwater tritium was below detection limits.

APPENDIX V

Concentrations of Stable Potassium in Water Samples

Table V-1. Stable potassium concentration in creek, lake, and field drain water samples collected in 1986.

Month sampled	Station ID	Sample type	Distance downstream (km)	Potassium ppm
April	RS-17	creek	0.5	0.50
April	R-5	creek	4.6	2.34
May	R-53	lake	0.0	0.68
May	RS-17	creek	0.5	0.60
May	T-1	creek	3.0	1.50
May	R-5	creek	4.6	1.55
May	T-2	creek	7.5	2.15
May	T-3	creek	10.2	1.24
May	R-8	creek	12.6	1.50
May	T-4	creek	17.2	3.05
May	R-11	creek	19.5	3.28
July	RS-53	lake	0.0	0.53
July	RS-17	creek	0.5	0.50
July	R-44	creek	2.6	1.40
July	T-1	creek	3.0	0.60
July	W-8	field	4.0	4.62
July	W-7	field	4.2	2.45
July	W-6	field	4.5	6.29
July	R-5	creek	4.6	1.35
July	T-2	creek	7.5	1.65
July	W-5	field	7.6	0.51
July	W-4	field	7.8	1.05
July	W-10	field	8.3	0.68
July	R-48	creek	8.5	0.85
July	W-12	field	9.3	0.53
July	W-9	field	9.8	1.38
July	W-3	field	10.2	1.05
July	T-3	creek	10.2	1.25
July	W-11	field	10.5	1.24
July	R-8	creek	12.6	2.05
July	W-2	field	12.9	2.71
July	W-1	field	13.1	9.60
July	R-22	creek	14.6	2.63
July	T-4	creek	17.2	2.09
July	R-11	creek	19.5	2.13

APPENDIX VI

Concentrations of Radionuclides in Water Hyacinth

Table VI-1. Concentrations of radionuclides in leaves of water hyacinth collected downstream of Rancho Seco in 1986. (Number in parenthesis is the 1 sigma counting error expressed as percentage of the value listed; "< dl" means less than detection limits.)

Sample ID	Station ID	Distance downstream (km)	Date collected	Dry/wet wt	pCi/g wet wt				
					40K	134Cs	137Cs	54Mn	60Co
k385	R-8	12.6	5/30/86	0.078	1.3(7)	0.01(36)	0.040(10)	0.005(55)	< dl
k386	T-3	10.2	5/30/86	0.081	1.4(7)	0.008(75)	0.026(8)	< dl	< dl
k387	R-5	4.6	5/30/86	0.091	1.3(7)	0.045(10)	0.17(2)	0.006(67)	0.032(7)
k388	T-1	3.0	5/30/86	0.116	1.4(6)	0.071(6)	0.28(2)	0.013(22)	0.12(3)
k389	RS-17	0.5	5/30/86	0.097	1.4(6)	0.041(10)	0.17(3)	0.014(40)	0.057(5)
k432	T-4	17.2	7/8/86	0.081	1.5(9)	< dl	0.043(23)	< dl	< dl
k433	R-8	12.6	7/8/86	0.091	1.4(10)	< dl	0.034(16)	< dl	< dl
k431	T-3	10.2	7/8/86	0.088	1.7(8)	0.04(21)	0.12(7)	0.02(36)	< dl
k429	R-5	4.8	7/8/86	0.108	2.1(6)	0.04(20)	0.13(5)	< dl	0.02(34)
k434	T-1	3.0	7/8/86	0.096	1.4(8)	0.03(21)	0.11(5)	< dl	0.04(9)
k430	RS-17	0.5	7/8/86	0.110	< dl	< dl	0.13(11)	< dl	0.03(32)
k455	R -11	19.5	8/13/86	0.073	1.1(9)	< dl	< dl	< dl	< dl
k456	R -22	15.4	8/13/86	0.066	1.0(12)	< dl	< dl	< dl	< dl
k457	R-8	12.6	8/13/86	0.088	1.0(8)	< dl	0.017(17)	< dl	< dl
k458	T-3	10.2	8/13/86	0.082	0.76(9)	< dl	0.014(24)	< dl	< dl
k459	R -52	5.4	8/13/86	0.073	1.5(5)	< dl	0.012(21)	< dl	< dl
k460	T-2	7.5	8/13/86	0.100	1.9(4)	< dl	0.03(19)	< dl	< dl
k461	R-5	4.6	8/13/86	0.078	2.5(3)	< dl	0.022(14)	< dl	< dl
k462	T-1	3.0	8/13/86	0.065	1.3(6)	< dl	0.024(15)	< dl	< dl
k463	RS-17	0.5	8/13/86	0.078	1.2(9)	< dl	0.041(16)	< dl	0.02(27)
k522	R -11	19.5	9/17/86	0.098	3.3(2)	< dl	< dl	< dl	< dl
k523	R -22	15.4	9/17/86	0.103	2.8(2)	< dl	0.005(24)	< dl	< dl
k524	R-8	12.6	9/17/86	0.095	2.0(3)	< dl	0.008(30)	< dl	< dl
k525	T-3	10.2	9/17/86	0.113	2.7(3)	< dl	0.006(39)	< dl	< dl
k526	T-2	7.5	9/17/86	0.114	2.8(3)	0.010(18)	0.042(7)	< dl	< dl
k527	R-5	4.6	9/17/86	0.099	3.0(2)	0.006(25)	0.02(7)	< dl	< dl
k528	T-1	3.0	9/17/86	0.102	3.4(2)	< dl	0.14(12)	< dl	< dl
k529	RS-17	0.5	9/17/86	0.125	2.9(3)	0.20(15)	0.87(4)	< dl	0.014(15)
k530	K-1	(a)	9/17/86	0.123	2.6(2)	< dl	< dl	< dl	< dl

Table VI-1. (continued).

Sample ID	Station ID	Distance downstream (km)	Date collected	Dry/wet wt	pCi/g wet wt				
					40K	134Cs	137Cs	54Mn	60Co
k576	R -11	19.5	10/29/86	0.114	3.4(3)	< dl	< dl	< dl	< dl
k577	R -22	15.4	10/29/86	0.166	3.5(2)	< dl	0.008(22)	< dl	< dl
k578	R-8	12.6	10/29/86	0.127	3.11(14)	0.002(60)	0.010(10)	< dl	< dl
k579	T-3	10.2	10/29/86	0.208	2.48(5)	0.052(13)	0.25(2)	< dl	< dl
k580	T-2	7.5	10/29/86	0.175	2.95(2)	0.102(2)	0.47(1)	0.003(36)	< dl
k581	R-5	4.6	10/29/86	0.118	3.39(2)	0.008(25)	0.033(6)	< dl	< dl
k582	T-1	3.0	10/29/86	0.137	3.31(2)	0.012(20)	0.053(6)	< dl	0.006(25)
k583	RS-1	2.3	10/29/86	0.125	3.34(2)	0.015(25)	0.060(6)	< dl	< dl
k584	RS- 5	1.8	10/29/86	0.166	4.11(2)	0.02(17)	0.090(5)	< dl	< dl
k585	RS-17	0.5	10/29/86	0.142	3.29(3)	0.12(5)	0.54(2)	0.023(3)	0.21(3)

(a) Collected in skunk creek.

APPENDIX VII
Concentrations of Radionuclides in Sediments

Table VII-1. Concentrations of radionuclides in creek sediment downstream of Rancho Seco collected during 1986. (Number in parenthesis is the 1 sigma counting error expressed as percentage of the value listed; "< dl" means less than detection limits.)

Sample ID	Station ID	Date collected	Distance downstream		Concentration (pCi/g dry wt)				
			(km)	Dry wt (g)	40K	134Cs	137Cs	60Co	54Mn
k167	RS-19	4/8/86	0.3	220.6	5.3(6)	0.58(3)	2.25(1)	0.16(6)	0.01(75)
k168	RS-18	4/8/86	0.4	325.4	3.0(10)	1.91(5)	7.41(1)	0.70(2)	< dl
k169	RS-17	4/8/86	0.5	131.9	5.2(10)	1.53(4)	6.90(2)	1.04(6)	< dl
k170	RS-15	4/8/86	0.7	278.4	1.1(34)	1.36(5)	5.29(3)	0.73(2)	0.02(47)
k171	RS-5	4/8/86	1.8	134.9	< dl	1.00(3)	3.89(6)	0.14(6)	< dl
k172	RS-3	4/8/86	2.1	140.6	4.3(16)	1.8(13)	7.2(16)	1.01(5)	0.06(47)
k173	RS-1	4/8/86	2.3	261.3	4.0(8)	1.52(3)	6.10(1)	0.60(2)	< dl
k174	T-1	4/8/86	3.0	217.5	9.7(5)	0.34(9)	1.19(4)	< dl	< dl
k175	R-4	4/8/86	4.2	439.1	11.7(3)	1.00(3)	3.70(1)	0.17(4)	< dl
k176	R-5	4/7/86	4.6	360.8	16.0(2)	0.46(3)	1.84(2)	0.02(25)	< dl
k177	T-2	4/8/86	7.5	563.8	11.4(3)	0.07(19)	0.25(4)	< dl	< dl
k178	T-3	4/9/86	10.2	459.4	12.2(4)	< dl	0.08(9)	< dl	< dl
k179	R-8	4/9/86	12.8	459.4	10.2(4)	0.02(74)	0.11(7)	< dl	< dl
k196	RS-17	6/1/86	0.5	294.8	4.9(6)	1.56(3)	6.35(1)	1.68(1)	0.02(66)
k195	T-1	6/1/86	3.0	341.4	13.2(3)	1.62(2)	6.51(2)	0.11(7)	< dl
k194	R-5	6/1/86	4.6	347.4	15.7(4)	0.36(4)	1.46(2)	< dl	< dl
k193	T-2	6/1/86	7.5	228.5	8.9(3)	0.28(9)	1.05(2)	< dl	< dl
k192	T-3	6/1/86	10.2	364.8	12.6(3)	0.42(4)	1.67(2)	< dl	< dl
k191	R-8	6/1/86	12.8	361.2	9.0(3)	0.12(9)	0.48(2)	< dl	< dl
k190	T-4	6/1/86	17.2	342.1	8.7(4)	< dl	< dl	< dl	< dl
k189	R-11	6/1/86	19.5	346.5	9.0(4)	0.02(65)	0.09(11)	< dl	< dl
k211	RS-17	7/9/86	0.5	236.8	5.2(2)	0.17(3)	1.70(1)	0.68(5)	0.024(17)
k210	RS-1	7/9/86	2.3	233.6	2.1(5)	0.74(2)	3.94(2)	0.29(4)	0.019(35)
k209	T-1	7/9/86	3.0	344.1	12.7(3)	1.70(2)	6.7(1)	0.12(6)	< dl
k208	R-4	7/9/86	4.2	349.0	14.8(2)	1.14(3)	5.44(1)	0.40(3)	< dl
k207	R-5	7/9/86	4.6	419.7	17.4(3)	0.64(5)	2.85(1)	0.07(10)	< dl
k206	R-30	7/9/86	5.6	198.6	12.7(3)	0.09(21)	0.51(3)	0.05(21)	0.02(78)
k205	T-2	7/9/86	7.5	318.0	7.6(4)	0.18(10)	0.78(2)	< dl	< dl
k204	T-3	7/9/86	10.2	390.1	10.1(1)	0.27(2)	1.16(1)	0.017(33)	0.01(52)
k203	R-20	7/9/86	10.5	413.1	9.3(4)	0.04(36)	0.20(4)	< dl	< dl
k202	R-8	7/9/86	12.8	226.0	9.4(5)	0.13(26)	0.56(3)	< dl	< dl

Table VII-1 (continued).

Sample ID	Station ID	Date collected	Distance		Dry wt (g)	Concentration (pCi/g dry wt)				
			downstream (km)			40K	134Cs	137Cs	60Co	54Mn
k201	R-22	7/9/86	15.4		397.8	9.1(4)	< dl	< dl	< dl	< dl
k200	T-4	7/9/86	17.2		277.8	11.0(3)	0.03(38)	0.12(8)	< dl	0.02(61)
k199	R-15	7/9/86	18.7		311.7	9.5(4)	< dl	0.05(15)	< dl	< dl
k198	R-11	7/9/86	19.5		316.6	9.2(2)	< dl	0.09(8)	< dl	< dl
k213	R-50	7/9/86	(a)		197.6	6.9(10)	0.27(15)	1.81(3)	0.06(26)	< dl
k222	RS-17	8/14/86	0.5		345.6	5.3(11)	0.45(12)	2.32(3)	0.53(8)	< dl
k223	RS-30	8/10/86	0.5		205.0	6.2(6)	0.05(44)	0.41(5)	< dl	< dl
k226	RS-15	8/13/86	0.7		205.0	5.9(14)	1.53(7)	7.16(3)	1.66(4)	< dl
k225	RS-16	8/13/86	0.8		341.1	4.8(12)	0.32(15)	1.63(4)	0.37(9)	< dl
k224	R-54	8/13/86	(b)		150.8	4.2(13)	0.31(14)	1.33(5)	< dl	< dl
k221	T-1	8/13/86	3.0		342.2	15.9(3)	0.33(8)	1.44(3)	0.07(22)	< dl
k220	R-5	8/15/86	4.6		359.1	16.9(5)	0.44(11)	2.10(3)	< dl	< dl
k219	T-2	8/14/86	7.5		345.6	9.5(11)	0.15(34)	0.86(8)	< dl	< dl
k218	T-3	8/12/86	10.2		361.0	12.4(6)	0.40(14)	1.81(4)	< dl	< dl
k217	R-8	8/12/86	12.8		380.0	8.7(4)	0.10(19)	0.39(5)	< dl	< dl
k216	R-22	8/12/86	15.4		362.0	8.7(6)	< dl	< dl	< dl	< dl
k215	T-4	8/15/86	17.2		234.0	7.4(4)	< dl	< dl	< dl	< dl
k214	R-11	8/11/86	19.5		346.0	10.5(5)	0.03(74)	0.08(18)	bd	< dl
k664	RS-17	9/16/86	0.5		370.7	4.9(6)	0.96(4)	4.29(1)	1.13(2)	< dl
k663	RS-1	9/16/86	2.3		101.4	3.4(11)	0.11(26)	0.60(5)	< dl	< dl
k662	T-1	9/16/86	3.0		350.7	14.2(4)	1.00(4)	4.24(1)	0.11(12)	< dl
k661	R-4	9/16/86	4.2		206.2	11.8(4)	0.56(6)	2.49(2)	< dl	< dl
k660	R-5	9/16/86	4.6		356.2	15.7(6)	0.47(14)	2.02(4)	< dl	< dl
k659	R-30	9/16/86	5.6		340.7	18.3(5)	1.03(7)	4.29(2)	0.10(26)	< dl
k658	R-7	9/16/86	6.4		353.7	11.9(7)	0.49(13)	2.38(4)	0.07(37)	< dl
k657	T-2	9/16/86	7.5		378.4	9.7(8)	0.18(22)	0.71(9)	< dl	< dl
k656	T-3	9/16/86	10.2		350.6	10.2(9)	0.56(12)	2.20(4)	< dl	< dl
k655	R-20	9/16/86	10.5		282.3	8.2(5)	0.07(27)	0.24(14)	< dl	< dl
k654	R-8	9/16/86	12.8		164.1	8.5(6)	0.08(32)	0.47(6)	< dl	< dl
k653	R-22	9/16/86	14.6		356.1	9.6(5)	< dl	0.03(28)	< dl	< dl
k652	T-4	9/16/86	17.2		304.1	8.7(3)	< dl	0.03(26)	< dl	< dl
k651	R-11	9/16/86	19.5		167.6	9.0(6)	< dl	< dl	< dl	< dl

Table VII-1. (continued).

Sample Station		Date collected	Distance downstream	Dry wt (g)	Concentration (pCi/g dry wt)				
ID	ID		(km)		40K	134Cs	137Cs	60Co	54Mn
k650	K-1	9/16/86	(c)	363.4	10.7(4)	< dl	0.29(6)	< dl	< dl
k685	RS-17	10/28/86	0.5	328.3	4.9(9)	0.54(6)	2.84(2)	0.80(3)	< dl
k686	RS-30	10/28/86	0.5	270.6	5.2(6)	0.06(29)	0.34(6)	< dl	< dl
k684	RS-16	10/28/86	0.6	300.0	3.7(12)	2.0(3)	9.3(2)	1.7(3)	< dl
k683	RS-15	10/28/86	0.7	90.7	5.1(31)	2.95(3)	15.0(2)	3.18(4)	< dl
k682	RS-14	10/28/86	0.8	208.1	4.7(22)	1.41(6)	6.92(2)	1.21(3)	< dl
k681	RS-13	10/28/86	0.9	233.7	3.5(13)	5.22(2)	24.9(1)	2.83(2)	< dl
k680	RS-12	10/28/86	1.0	164.0	4.9(9)	2.92(2)	13.9(1)	1.99(2)	0.05(47)
k679	RS-11	10/28/86	1.1	92.7	5.3(13)	3.25(3)	15.1(1)	2.98(2)	< dl
k678	RS-10	10/28/86	1.2	54.1	5.9(17)	3.56(4)	16.8(1)	3.19(3)	< dl
k677	RS-9	10/28/86	1.3	29.3	8.6(30)	3.84(6)	17.1(2)	2.88(8)	< dl
k676	RS-8	10/28/86	1.4	40.6	5.2(60)	3.73(10)	17.8(2)	4.01(3)	< dl
k675	RS-7	10/28/86	1.5	340.9	4.8(11)	0.94(7)	5.50(2)	2.16(2)	< dl
k674	RS-6	10/28/86	1.6	53.1	6.5(25)	3.23(6)	16.0(1)	3.36(3)	< dl
k673	RS-1	10/28/86	2.3	252.8	4.5(10)	0.26(11)	1.34(3)	0.08(18)	< dl
k672	T-1	10/28/86	3.0	241.6	12.8(9)	0.96(7)	4.56(2)	0.08(21)	< dl
k671	R-5	10/28/86	4.6	370.3	16.0(4)	0.46(7)	2.16(2)	0.09(17)	< dl
k670	T-2	10/28/86	7.5	373.4	8.8(4)	0.17(11)	0.84(3)	< dl	< dl
k669	T-3	10/28/86	10.2	369.1	10.7(5)	0.20(11)	1.03(2)	< dl	< dl
k668	R-8	10/28/86	12.8	284.4	9.2(7)	< dl	< dl	< dl	< dl
k667	R-22	10/28/86	14.6	328.7	9.5(2)	0.08(17)	0.38(4)	0.02(40)	< dl
k666	T-4	10/28/86	17.2	387.4	9.1(5)	< dl	0.03(40)	< dl	< dl
k665	R-11	10/28/86	19.5	331.4	10.1(5)	< dl	0.09(15)	< dl	< dl

(a) 0.7 km N of confluence of Hadselville and Laguna creeks.

(b) Holding pond located 200 m from station T-1.

(c) Skunk Creek.

Note: Sediment was sampled with a hand held corer, 28.3 square cm in area to a depth of 12 cm. All samples sieved through 2-mm screen to remove large rocks. Only the fine fraction was analyzed.

Table VII-2. Concentrations of radionuclides in sediment core sample* from station R-5, collected 4/7/86. (Number in parenthesis is the 1 sigma counting error expressed as percentage of the value listed; "< dl" means less than detection limits.)

Sample ID	Depth interval (cm)	Sample dry wt (g)	Concentration (pCi/g dry wt)			
			40K	134Cs	137Cs	60Co
k180	0-5	263	12.7(4)	0.39(8)	1.53(2)	< dl
k181	5-10	253	10.7(6)	0.42(10)	1.45(2)	< dl
k182	10-15	267	8.9(7)	0.41(10)	1.49(2)	0.03(36)
k183	15-20	262	8.7(5)	0.35(11)	1.53(2)	< dl
k184	20-24	264	8.5(5)	0.44(8)	1.66(2)	< dl

* Core cross sectional area was 28.3 square centimeters.

APPENDIX VIII
Concentrations of Radionuclides in Soil Samples

Table VIII-1. Concentrations of radionuclides in soil and grass from the ranch of Mr. R. Gudge collected on 26 August 1986. (Number in parenthesis is the 1 sigma counting error expressed as percentage of the value listed; "< dl" means less than detection limits.)

Sample ID	pCi/g dry wt			
	40K	137Cs	226Ra	228Th
Soil samples				
k227 (Gu 1)	8.6(4)	0.62(3)	0.35(7)	0.51(7)
k228 (Gu 4)	10.4(4)	0.63(2)	0.43(5)	0.59(5)
k229 (Gu 7)	10.5(3)	0.15(3)	0.40(5)	0.48(4)
k230 (Gu 9)	9.6(4)	0.46(3)	0.40(5)	0.55(6)
k231 (Gu 15)	10.7(3)	0.71(2)	0.40(5)	0.53(4)
Grass samples				
k469 (Gu 1)	13.5(4)	0.09(13)	< dl	0.06(48)
k470 (Gu 4)	16.1(3)	0.15(17)	0.10(26)	0.14(11)
k471 (Gu 7)	22.0(3)	0.11(21)	< dl	0.10(46)
k472 (Gu 9)	9.4(4)	0.26(4)	0.16(13)	0.28(7)
k473 (Gu 15)	24.2(2)	0.06(23)	< dl	< dl

Note: Soil sampled to a depth of 4 cm; 48.6 square centimeters in area.
Refer to plot of ranch in text for sample location.

Table VIII-2. Concentrations of global fallout ^{137}Cs and some natural radionuclides in surface soil (0-4 cm) collected at a distance of 5 miles (11 km) from Rancho Seco on 18 September 1986. (Number in parenthesis is the 1 sigma counting error expressed as percentage of the value listed.)

Sample ID*	Direction from Rancho Seco	Concentration (pCi/ g dry wt)			
		40K	^{137}Cs	^{226}Ra	^{228}Th
k566	northeast	21.0(2)	0.95(2)	0.88(3)	0.74(6)
k567	east	10.7(4)	1.65(2)	0.53(5)	0.72(7)
k568	southeast	13.3(5)	0.85(2)	0.67(6)	0.98(8)
k569	south	12.3(4)	0.38(4)	0.47(6)	0.59(9)
k570	southwest	8.0(5)	0.47(3)	0.35(8)	0.57(8)
k571	west	7.6(5)	0.21(5)	0.52(5)	0.62(8)
k572	northwest	11.7(4)	0.19(5)	0.73(4)	0.90(6)
k573	north	9.1(5)	0.62(2)	0.55(4)	0.67(7)

* Stations identified in Figure 1 as U-1 (northeast) through U-8 (north).

Note: Soil area sampled was 28.2 square centimeters.

Table VIII-3. Concentrations of radionuclides in other surface soil samples collected in 1986. (Number in parenthesis is the 1 sigma counting error expressed as percentage of the value listed; "< dl" means less than detection limits.)

Sample ID	Sample description	Concentration (pCi / g dry wt)			
		40K	134Cs	137Cs	226Ra
k233	Marciel Ranch Surface	8.4(6)	< dl	0.25(7)	0.68(4)
k234	Soil (0-4 cm depth), 9/86	7.2(6)	< dl	0.40(5)	0.64(5)
k235		7.4(8)	< dl	1.05(3)	0.60(6)
k232	Lodi Ranch Soil, 9/86	17.8(2)	< dl	0.11(8)	0.72(3)
k574		16.9(3)	< dl	0.07(13)	0.71(5)
k497	Livermore Soil, 9/86	5.5(3)	0.02(40)*	0.12(7)	0.56(2)
k212	Driveway Sand Family Z5, 2/85 Rancho Seco Area	8.8(2)	0.11(9)	0.30(3)	0.33(3)

* From Chernobyl fallout.

Table VIII-4. Concentrations of radionuclides in soil profile samples collected in August 1986. (Number in parenthesis is the 1 sigma counting error expressed as percentage of the value listed; "< dl" means less than detection limits.)

Sample ID	Depth interval (cm)	Sample dry wt (g)	Concentration (pCi/g dry wt)			
			40K	134Cs	137Cs	60Co
Station RSP-1						
k236	0-5.1	202.3	6.6(9)	1.24(6)	6.87(1)	0.37(7)
k237	5.1-10.2	263.0	5.9(9)	0.18(33)	1.63(3)	0.20(12)
k238	10.2-15.2	392.8	5.4(10)	0.03(80)	0.59(5)	0.10(16)
k239	15.2-20.3	417.8	6.2(9)	< dl	0.08(60)	< dl
k240	20.3-25.4	389.8	6.3(9)	< dl	0.04(40)	< dl
k241	25.4-30.5	355.3	5.9(7)	< dl	< dl	< dl
k242	30.5-40.6	393.2	6.9(7)	< dl	< dl	< dl
k243	40.6-50.8	381.7	7.1(5)	< dl	< dl	< dl
k244	50.8-61.0	277.4	7.2(6)	< dl	< dl	< dl
Station RSP-5						
k245	0-5.1	197.6	7.4(11)	0.23(21)	1.50(4)	0.05(28)
k246	5.1-10.2	249.5	5.8(4)	0.10(48)	0.87(6)	< dl
k247	10.2-15.2	316.3	5.9(13)	< dl	0.95(5)	< dl
k248	15.2-20.3	327.9	5.7(27)	< dl	1.19(9)	< dl
k249	20.3-25.4	345.9	5.3(7)	< dl	0.82(4)	< dl
k250	25.4-30.5	321.9	5.9(15)	< dl	0.08(30)	< dl
k483	30.5-40.6	413.7	6.5(7)	< dl	< dl	< dl
k484	40.6-50.8	410.4	6.5(7)	< dl	< dl	< dl
k485	50.8-61.0	306.9	6.9(9)	< dl	0.05(33)	< dl

Note: RSP stations are irrigated with Clay Creek water at RS-17. Surface area sampled was 106.3 square centimeters.

APPENDIX IX

Concentrations of Radionuclides in Some Other Terrestrial Samples

Table IX-1. Concentrations of radionuclides in miscellaneous terrestrial samples obtained in 1986. (Number in parenthesis is the 1 sigma counting error expressed as percentage of the value listed; "< dl" means less than detection limits.)

Sample ID	Description	Dry/wet wt	Concentration (pCi/g wet wt)		
			40K	134Cs	137Cs
k474	Lodi Grass 8/86	0.220	4.0(4)	< dl	< dl
k562	S. Livermore Grass 9/86	(c)	14.7(2)	0.01(44) (a)	0.027(16)
k308	Grass from Intersection Clay East & Highway 104	0.372	0.26(45)	< dl	0.03(24)
k420	Honey from hive in vicinity of Sta. RS-17 6/86		0.67(8)	< dl	0.005(50)
k644	as above 8/86		0.21(15)	< dl	< dl
k330	Beef hindquarter flesh Rancho Seco, 1/86	0.237	2.8(3)	< dl	0.015(14)
	Alfalfa pellets				
k482(b)	From Gudgel ranch 8/86	(c)	23.7(1)	0.021(17) (a)	0.049(7)
k560(b)	From Livermore, Ca. feed store 9/86	(c)	22.9(1)	0.022(14) (a)	0.057(5)
k563(d)	From Elk Grove, Ca. feed store 9/86	(c)	17.3(1)	0.003(60) (a)	0.012(16)
k641	Blackberries RS-1, 10/86	0.124	1.83(3)	< dl	< dl
k642	Blackberries RS-11, 10/86	0.136	2.27(4)	< dl	< dl
k643	Blackberries RS-15, 10/86	0.156	2.06(4)	0.014(40)	0.055(8)

(a) Originates from Chernobyl fallout.

(b) Alfalfa originates from Nevada, processed by Elk Grove Milling, Inc.

(c) Concentrations expressed as pCi/g dry wt.

(d) Alfalfa originates from Hanford, CA.

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