

TABLE D-1**DETECTION OF FREQUENCY OF PU-238
IN DRINKING WATER 1970-1989**

Location	Number of Samples	Frequency of Detection	Percent Detects	Maximum Concentration	Date of Maximum
Broomfield	253	33/253	13%	0.16	3/19/74
Westminster	100	10/100	10%	0.62	10/25/73
Arvada	28	5/28	18%	0.58	2/14/75
Golden	30	3/30	10%	0.19	2/14/75
Boulder	22	4/22	18%	0.21	4/7/75

Source: Calculated from data reported by the Colorado Department of Health in Monthly Environmental Surveillance Reports.

TABLE D-2**DETECTION FREQUENCY OF PU-239/240
IN DRINKING WATER 1970-1989**

Location	Number of Samples	Frequency of Detection	Percent Detects	Maximum Concentration	Date of Maximum
Broomfield	343	84/343	24%	4.52	4/26/73
Westminster	150	47/150	31%	0.75	7/5/72
Arvada	47	8/47	17%	1.15	3/1/75
Golden	51	10/51	20%	0.09	2/14/75
Boulder	49	6/49	12%	0.48	4/7/75

Source: Calculated from data reported by the Colorado Department of Health in Monthly Environmental Surveillance Reports.

TABLE D-3**DETECTION FREQUENCY OF NATURAL URANIUM
IN DRINKING WATER 1970-1989**

Location	Number of Samples	Frequency of Detection	Percent Detects	Maximum Concentration	Date of Maximum
Broomfield	356	188/356	53%	346.4	12/13/76
Westminster	280	94/280	34%	29.15	7/10/74
Arvada	91	31/91	34%	35	2/1/80
Golden	45	14/45	31%	13.89	3/29/74
Boulder	42	8/42	19%	15.46	4/16/73

Source: Calculated from data reported by the Colorado Department of Health in Monthly Environmental Surveillance Reports.

TABLE D-4**DETECTION FREQUENCY OF TRITIUM
IN DRINKING WATER 1970-1989**

Location	Number of Samples	Frequency of Detection	Percent Detects	Maximum Concentration	Date of Maximum
Broomfield	854	345/854	41%	23293	6/1/73
Westminster	280	131/280	47%	3450	6/2/75
Arvada	124	29/124	23%	1291	11/13/91
Golden	59	16/59	27%	1776	10/6/71
Boulder	65	12/65	19%	1101	9/26/72

Source: Calculated from data reported by the Colorado Department of Health in Monthly Environmental Surveillance Reports.

TABLE D-5**ANNUAL AVERAGE PU-238 (pCi/l)
CONCENTRATION IN DRINKING WATER**

Year	Arvada	Boulder	Golden	Broomfield	Westminster
1970	0.015	no samples	0.015	0.015	0.015
1971	0.015	no samples	no samples	0.015	0.015
1972	0.015	0.015	0.015	0.0155	0.015
1973	0.015	0.053	0.015	0.023	0.051
1974	0.015	0.015	0.0125	0.039	0.021
1975	0.32	0.1125	0.0775	0.017	0.017
1976	no samples	no samples	no samples	0.013	0.015
1977	no samples	no samples	no samples	0.014	no samples
1978	0.015	0.015	0.015	0.015	0.015
1979	0.015	no samples	0.015	0.018	0.015
1980	0.015	0.01375	0.015	0.015	0.015
1981	0.015	0.01375	0.01375	0.015	0.015
1982	0.015	0.015	0.015	0.018	0.02
1983	0.015	no samples	0.015	0.015	0.015
1984-1989	No Analysis for Pu-238				

Source: Calculated from data reported by the Colorado Department of Health in Monthly Environmental Surveillance Reports.

TABLE D-6

**ANNUAL AVERAGE PU-239/240 (pCi/l)
CONCENTRATION IN DRINKING WATER**

Year	Arvada	Boulder	Golden	Broomfield	Westminster
1970	0.015	no samples	0.02	0.027	0.11
1971	0.01	no samples	no samples	0.022	0.014
1972	0.01	0.025	0.027	0.073	0.07
1973	0.013	0.01	0.013	0.174	0.055
1974	0.01	0.01	0.01	0.063	0.019
1975	0.43	0.245	0.045	0.016	0.018
1976	no samples	no samples	no samples	0.015	0.01
1977	no samples	no samples	no samples	0.018	no samples
1978	0.03	0.01	0.03	0.01	0.01
1979	0.01	no samples	0.01	0.084	0.015
1980	0.01	0.01	0.01	0.01	0.01
1981	0.01	0.01	0.011	0.01	0.011
1982	0.01	0.0175	0.015	0.011	0.17
1983	0.0275	0.041	0.01	0.021	0.029
1984	0.46	0.256	0.0275	0.0275	0.073
1985	0.35	0.03	0.02	0.017	0.02
1986	0.0075	0.014	0.005	0.0055	0.006
1987	0.004	0.004	0.004	0.006	0.006
1988	0.002	0.0013	0.003	0.0023	0.0063
1989	no samples	no samples	no samples	0.0004	0.0015

Source: Calculated from data reported by the Colorado Department of Health in Monthly Environmental Surveillance Reports.

TABLE D-7

**ANNUAL AVERAGE U NATURAL (pCi/l)
CONCENTRATION IN DRINKING WATER**

Year	Arvada	Boulder	Golden	Broomfield	Westminster
1970	no samples	no samples	no samples	no samples	no samples
1971	no samples	no samples	no samples	3.52	3.78
1972	6.41	15	1.69	3.29	4.53
1973	5.32	8.48	5.64	5.48	5.84
1974	3.86	6.53	11.68	5.19	6.15
1975	1.5	1.5	1.5	4.52	3.6
1976	no samples	no samples	no samples	16.74	0.852
1977	no samples	no samples	no samples	1	1.5
1978	3.52	1.5	1.21	1.29	0.99
1979	0.69	0.35	0.69	0.85	0.69
1980	14.5	1.5	1.5	2.21	1.75
1981	4.64	1.5	1.5	2.86	1.72
1982	2.53	2.375	2.25	2.925	2.01
1983	1.52	1.8	1.375	1.125	1.27
1984	1.27	1	1	1.23	1.18
1985	1.12	1	1.3	1	1
1986	1	1	1	1.18	1.05
1987	1	1	1.6	1.75	1
1988	1	1	2.1	1	1
1989	no samples	no samples	no samples	1	1

Source: Calculated from data reported by the Colorado Department of Health in Monthly Environmental Surveillance Reports.

TABLE D-8**ANNUAL AVERAGE TRITIUM (pCi/l)
CONCENTRATION IN DRINKING WATER**

Year	Arvada	Boulder	Golden	Broomfield	Westminster
1970	no samples	no samples	no samples	1051.8	1151
1971	982.5	735	1776	836	698
1972	no samples	533.7	650	995.4	892.75
1973	454.67	250	741.25	8555.2	678.3
1974	381.33	469	250	5432.1	648.2
1975	250	443	405.5	1899.6	724.1
1976	317	329.5	351	754	540.8
1977	495.5	250	330	446	370.04
1978	670.5	524	307.5	362.1	352.1
1979	280.25	212.5	212.5	302.8	281
1980	258	175	329.7	282.5	252.6
1981	412.3	262	332.3	439	275.4
1982	329	355.25	463.25	295.8	330.48
1983	218.2	231.6	175	265.3	284.4
1984	175	175	175	223.5	235.6
1985	175	175	175	208.9	209.9
1986	189.6	175	235.5	188.9	190.2
1987	233.9	175	175	194	202.24
1988	175	175	175	187	187.13
1989	no samples	no samples	no samples	102.1	100

Source: Calculated from data reported by the Colorado Department of Health in Monthly Environmental Surveillance Reports.

TABLE C-2

ROCKY FLATS PLANT BUILDING 707
CARBON TETRACHLORIDE EMISSION ESTIMATES

Resource	Estimate Basis	Estimate Year	Carbon Tetrachloride Emission Estimate (tons/yr)
EG&G, 1990a (APEN)	Use	1989	32.3
Rockwell, 1988a	Use	1988	66
Martin Marietta, 1990	Monitoring	1989	53
Kruehauf and Richter, 1974	Use	1974	80
Rockwell, 1982	Monitoring	1974-75	46 Average
	Monitoring	1974-75	120 Maximum
	Material balance	1981	20
Rockwell, 1989	Use	1988-89	48 Average
	Use	1988-89	76 Maximum
Rockwell, 1988b	Use	1988	50 Average
	Use	1988	80 Maximum
	Use	1987-88	93

TABLE C-3

**ROCKY FLATS PLANT BUILDING 776/777
CARBON TETRACHLORIDE EMISSION ESTIMATES**

Resource	Estimate Basis	Estimate Year	Carbon Tetrachloride Emission Estimate (tons/yr)
EG&G, 1990 (APEN)	Use	1989	8.10
Dow Chemical, 1974	Monitoring	1973	10 Average
	Monitoring	1973	34 Maximum
Martin Marietta, 1990	Monitoring	1989	33
U.S. Dept. of Energy, 1989	Use	1989	44
Rockwell, 1982	Material balance	1974-75	15

TABLE C-4

ROCKY FLATS PLANT — TOTAL
CARBON TETRACHLORIDE EMISSION ESTIMATES

Resource	Estimate Basis	Estimate Year	Carbon Tetrachloride Emission Estimate (tons/yr)
EG&G APENs	Use	1989	40
U.S. Dept. of Energy, 1980	Use	1977	36
	Monitoring	1975	66
Kruehauf and Richter, 1974	Use	1973	81
Martin Marietta, 1990	Monitoring	1989	89
U.S. Dept. of Energy, 1989	Use	1988	93
EG&G, 1988	Use	1988	65
	Use	1989	24
Rockwell, 1982	Monitoring	1974-75	56 Average
	Monitoring	1974-75	153 Maximum
	Material Balance	1974-75	34
	Material Balance	1974-75	106
Rockwell, 1989	Use	1988-89	48

TABLE C-10

ROCKY FLATS PLANT — TOTAL 1,1,1-TRICHLOROETHANE EMISSION ESTIMATES

Resources	Estimate Basis	Estimate Year	Trichloroethane Emission Estimate (tons/year)
EG&G APENs	Use/Analogy	1989	20.8*
U.S. Department of Energy, 1980	Use	1977	26
Martin Marietta, 1990	Monitoring	1989	46
U.S. Department of Energy, 1989	Use	1988	24
Rockwell, 1988a	Use	1988	20
Rockwell, 1988b	Use	1987-89	44
Rockwell, 1989	Use	1988-89	17
EG&G, 1988	Use	1988	24
	Use	1989	23

* Adjusted to include a higher emission estimate for Building 707 Production Control Operations — Module D — TCA dip tanks.

TABLE C-11

INFORMATION CONCERNING USE OF TRICHLOROETHYLENE DURING 1973

Building	User	Annual Use (gallons)
444	Chem Tech R&D	55
447/881	Metallurgical Operations	495
551	Stores	55
705	Ceramic R&D	55
771	Plutonium Fab R&D	5,720
771/707	Assembly Operations	165
774	Waste Treatment	55
777	Special Assembly	550
865	General Fab R&D	1,815
881	Assembly Operations	440
881	Fabrication	55
883	Metallurgical Operations	55
Site Wide	Chem Tech R&D Activities	55
Site Wide	Waste Management Activities	165
Miscellaneous	Unknown	165
TOTAL		9,900

TABLE C-12

ROCKY FLATS PLANT — TOTAL TRICHLOROETHYLENE EMISSION ESTIMATES

Resource	Estimate Basis	Estimate Year	Trichloroethylene Emission Estimate (tons/yr)
EG&G APENs	Use	1986, 1987, 1988, 1989	1.5 x 10 ⁻³
Dow Chemical (1972-1974)	Use	1973	60
Musgrave (circa 1973)	Use	1973	62
U.S. Department of Energy (1980)	Use	1977	2