

APPENDIX C-1

SUMMARY OF WATER AND SEDIMENT MONITORING DATA

TABLE C 1.1.1

TOTAL RADIOACTIVITY OF LIQUID EFFLUENTS RELEASED
FROM WYDP LAGOON 3 IN 1986
(CURIES)

	ALPHA	BETA	H-3	CS-137	SR-90	I-129
1ST QTR	1.03 ± 0.7 E-03	2.96 ± 0.3 E-02	4.34 ± 0.2 E-01	2.96 ± 0.3 E-02	3.09 ± 0.2 E-03	2.79 ± 0.4 E-04
2ND QTR	5.13 ± 2.3 E-04	4.91 ± 0.3 E-03	2.03 ± 0.1 E-01	5.94 ± 1.0 E-03	9.22 ± 0.7 E-04	5.84 ± 0.8 E-04
3RD QTR	8.62 ± 5.6 E-04	2.30 ± 0.2 E-02	2.97 ± 0.1 E-01	1.75 ± 0.3 E-02	1.88 ± 0.1 E-03	4.14 ± 0.8 E-04
4TH QTR	3.14 ± 2.9 E-04	1.43 ± 0.2 E-02	2.14 ± 0.1 E-01	1.33 ± 0.2 E-02	1.13 ± 0.1 E-03	3.75 ± 0.6 E-04
1986 TOTALS	2.72 ± 1.0 E-03	7.18 ± 0.4 E-02	1.15 ± 0.3 E+00	6.63 ± 0.5 E-02	7.02 ± 0.3 E-03	1.65 ± 0.1 E-03
AVERAGE CONCENTRATION (uCi/ml)	5.44 E-08	1.44 E-06	2.30 E-05	1.33 E-05	1.40 E-07	3.30 E-08
	U-238	U-234	U-235	PU-238	PU-239	AM-241
1ST QTR	1.71 ± 0.6 E-04	5.55 ± 2.1 E-04	1.51 ± 0.6 E-05	1.30 ± 0.5 E-06	1.46 ± 0.5 E-06	N/A
2ND QTR	1.80 ± 0.4 E-04	3.74 ± 0.9 E-04	1.22 ± 2.0 E-05	1.60 ± 0.9 E-07	2.14 ± 1.0 E-07	4.68 ± 2.1 E-07
3RD QTR	3.44 ± 0.5 E-04	4.70 ± 0.6 E-04	1.01 ± 1.5 E-05	1.68 ± 0.6 E-06	6.40 ± 3.9 E-07	2.10 ± 0.9 E-06
4TH QTR	1.08 ± 0.3 E-04	2.20 ± 0.4 E-04	1.08 ± 1.1 E-05	4.69 ± 2.7 E-07	5.68 ± 2.7 E-07	1.19 ± 0.5 E-06
1986 TOTALS	8.03 ± 0.9 E-04	1.66 ± 0.2 E-03	4.82 ± 2.8 E-05	3.61 ± 0.8 E-06	2.88 ± 0.7 E-06	3.76 ± 1.1 E-06
AVERAGE CONCENTRATION (uCi/ml)	1.51 E-08	3.32 E-08	< 1.0 E-09	7.22 E-11	5.76 E-11	1.16 E-10

TABLE C-1.1.1.2

1986 WVDP LAGOON 3
COMPARISON OF LIQUID EFFLUENT
RADIOACTIVITY LEVELS WITH DOE GUIDELINES

ISOTOPE	TOTAL UCI RELEASED	AVG CONC (UCI/ml)	DCG (UCI/ml)	PERCENT OF DCG
Alpha	2.72 E+03	5.44 E-08	6.0 E-08 ¹	91
Beta	7.18 E+04	1.44 E-06	1.0 E-06 ²	144
H-3	1.15 E+06	2.30 E-05	2.0 E-03	1.2
Cs-137	6.63 E+04	1.33 E-06	3.0 E-06	44.3
Sr-90	7.02 E+03	1.40 E-07	1.0 E-06	14.0
I-129	1.65 E+03	3.30 E-08	5.0 E-07	6.6
U-234 ³	1.66 E+03	3.32 E-08	5.0 E-07	6.6
U-235 ³	4.82 E+01	<1.00 E-09	6.0 E-07	0.2
U-238 ³	8.03 E+02	1.61 E-08	6.0 E-07	2.7
Pu-238	3.61 E+00	7.22 E-11	4.0 E-07	<0.1
Pu-239	2.88 E+00	5.76 E-11	3.0 E-07	<0.1
Am-241	3.76 E+00	1.16 E-10	6.0 E-08	0.2
				76.0 ⁴

Notes:

* Total Volume Released = 5.00 E+10 ml, measured at actual on-site release point.

1 as Am-241

2 as Sr-90

3 Total UICmg = 2.41 E+09 Avg UICug/ml = 4.82 E-02

4 Total Percent DCG for all releases

TABLE C-1.2

RADIOACTIVITY CONCENTRATIONS
IN SURFACE WATER UPSTREAM OF WVDP
AT FOX VALLEY (WFBCBKG) $\mu\text{Ci}/\text{ml}$

	ALPHA	BETA	H-3	SR-90	CS-137
1986					
JAN	< 5.1 E-10	1.58 \pm 1.0 E-09	2.42 \pm 1.0 E-07		
FEB	< 8.6 E-10	3.17 \pm 1.1 E-09	< 1.0 E-07		
MAR	3.51 \pm 2.1 E-09	1.03 \pm 0.2 E-08	< 1.0 E-07	4.73 \pm 2.1 E-09	< 2.1 E-08
1ST QTR					
APR	< 7.6 E-10	2.58 \pm 1.0 E-09	< 1.0 E-07		
MAY	< 5.0 E-10	1.51 \pm 1.0 E-09	< 1.0 E-07		
JUN	1.43 \pm 1.3 E-09	4.25 \pm 1.3 E-09	< 1.0 E-07	4.90 \pm 2.3 E-09	< 2.1 E-08
2ND QTR					
JUL	< 5.1 E-10	3.04 \pm 1.1 E-09	< 1.0 E-07		
AUG	< 1.0 E-09	3.55 \pm 1.2 E-09	< 1.0 E-07		
SEP	< 7.8 E-10	6.14 \pm 1.4 E-09	< 1.0 E-07	8.34 \pm 2.9 E-09	< 2.1 E-08
3RD QTR					
OCT	< 8.9 E-10	4.76 \pm 1.3 E-09	< 1.0 E-07		
NOV	< 5.7 E-10	3.78 \pm 1.2 E-09	< 1.0 E-07		
DEC	< 9.0 E-10	5.83 \pm 1.3 E-09	< 1.0 E-07	< 2.3 E-09	< 2.1 E-08
4TH QTR					

TABLE C-1.3

RADIOACTIVITY CONCENTRATIONS
IN SURFACE WATER DOWNSTREAM OF WVDP
AT THOMAS CORNERS (WFBCTCB) $\mu\text{Ci}/\text{ml}$

1986	ALPHA	BETA	H-3	SR-90	CS-137
JAN	< 1.0 E-09	4.27 ± 1.2 E-09	1.70 ± 0.9 E-07		
FEB	4.05 ± 2.6 E-09	1.27 ± 0.2 E-08	< 1.0 E-07		
MAR	3.22 ± 1.6 E-09	7.56 ± 1.4 E-09	< 1.0 E-07		
1ST QTR				2.88 ± 1.6 E-09	< 2.1 E-08
APR	2.96 ± 1.9 E-09	8.17 ± 1.5 E-09	< 1.0 E-07		
MAY	< 7.4 E-10	3.21 ± 1.1 E-09	< 1.0 E-07		
JUN	< 1.0 E-09	5.65 ± 1.4 E-09	< 1.3 E-07		
2ND QTR				3.30 ± 2.2 E-09	< 2.1 E-08
JUL	1.46 ± 1.2 E-09	6.37 ± 1.4 E-09	< 1.0 E-07		
AUG	2.51 ± 1.9 E-09	9.94 ± 1.7 E-09	< 1.0 E-07		
SEP	< 8.4 E-10	1.09 ± 0.2 E-08	2.01 ± 1.1 E-07		
3RD QTR				6.57 ± 2.4 E-09	< 2.1 E-08
OCT	1.80 ± 1.4 E-09	1.21 ± 0.2 E-08	< 1.0 E-07		
NOV	< 5.9 E-10	5.71 ± 1.3 E-09	< 1.0 E-07		
DEC	< 8.2 E-10	7.25 ± 1.4 E-09	< 1.0 E-07		
4TH QTR				3.22 ± 2.5 E-09	3.5 ± 3.1 E-08

TABLE C-1.4

RADIOACTIVITY CONCENTRATIONS
IN SURFACE WATER DOWNSTREAM OF WVDP
AT FRANKS CREEK (WNSPO06) $\mu\text{Ci}/\text{ml}$

1986	ALPHA	BETA	H-3	SR-90	CS-137
JAN	4.32 ± 2.8 E-09	4.37 ± 0.3 E-08	1.60 ± 0.1 E-06		
FEB	2.26 ± 1.6 E-09	4.51 ± 0.3 E-08	3.35 ± 1.0 E-07		
MAR	1.67 ± 1.3 E-09	2.26 ± 0.2 E-08	2.12 ± 1.1 E-07		
1ST QTR				1.19 ± 0.2 E-08	1.71 ± 0.4 E-07
APR	2.54 ± 1.9 E-09	4.84 ± 0.3 E-08	< 1.0 E-07		
MAY	< 1.1 E-09	3.36 ± 0.3 E-08	4.86 ± 1.1 E-07		
JUN	7.62 ± 4.4 E-09	9.77 ± 0.5 E-08	3.83 ± 0.2 E-06		
2ND QTR				2.92 ± 0.4 E-08	8.57 ± 4.2 E-08
JUL	4.07 ± 3.1 E-09	7.00 ± 0.4 E-08	2.05 ± 0.2 E-06		
AUG	< 1.7 E-09	3.21 ± 0.3 E-08	2.68 ± 1.3 E-07		
SEP	4.06 ± 2.7 E-09	4.81 ± 0.3 E-08	5.69 ± 1.2 E-07		
3RD QTR				1.96 ± 0.3 E-08	1.72 ± 0.5 E-07
OCT	4.36 ± 3.8 E-09	6.56 ± 0.4 E-08	1.69 ± 0.2 E-06		
NOV	< 9.2 E-10	1.67 ± 0.2 E-08	1.94 ± 1.0 E-07		
DEC	3.88 ± 3.4 E-09	7.47 ± 0.4 E-08	1.60 ± 0.1 E-06		
4TH QTR				1.81 ± 0.4 E-08	2.70 ± 0.4 E-07

TABLE C-1.5
 RADIOACTIVITY CONCENTRATIONS
 IN SURFACE WATER DOWNSTREAM OF BUTTERMILK CREEK
 AT FELTON BRIDGE (WFFELBR) UCI/mi

1986	ALPHA	BETA	H-3	SR-90	CS-137
JAN	1.76 ± 1.6 E-09	1.03 ± 0.2 E-08	< 1.0 E-07	2.46 ± 1.4 E-09	< 2.1 E-08
FEB	< 9.7 E-10	4.95 ± 1.3 E-09	< 1.0 E-07	2.99 ± 1.8 E-09	< 2.1 E-08
MAR	< 7.5 E-10	5.46 ± 1.3 E-09	< 1.0 E-07	< 1.1 E-09	< 2.1 E-08
APR	< 8.0 E-10	2.01 ± 1.0 E-09	1.43 ± 1.1 E-07	8.45 ± 2.5 E-09	< 2.1 E-08
MAY	< 8.3 E-10	4.55 ± 1.3 E-09	< 1.0 E-07	5.11 ± 2.6 E-09	4.47 ± 3.5 E-08
JUN	< 1.3 E-09	4.83 ± 1.3 E-09	< 1.0 E-07	7.09 ± 2.6 E-09	< 2.1 E-08
JUL	< 1.1 E-09	4.51 ± 1.3 E-09	< 1.0 E-07	4.80 ± 2.0 E-09	< 2.1 E-08
AUG	1.34 ± 1.3 E-09	7.76 ± 1.5 E-09	< 1.0 E-07	2.92 ± 1.8 E-09	< 2.1 E-08
SEP	2.52 ± 1.9 E-09	6.52 ± 1.5 E-09	1.31 ± 1.1 E-07	8.14 ± 2.4 E-09	< 2.1 E-08
OCT	3.00 ± 2.0 E-09	1.21 ± 0.2 E-08	< 1.0 E-07	1.30 ± 0.3 E-08	< 2.1 E-08
NOV	< 1.2 E-09	1.26 ± 0.2 E-08	< 1.0 E-07	8.57 ± 3.1 E-09	< 2.1 E-08
DEC	1.40 ± 1.4 E-09	1.27 ± 0.2 E-08	< 1.0 E-07	4.64 ± 2.4 E-09	3.37 ± 3.1 E-08

TABLE C-1.6

RADIOACTIVITY CONCENTRATIONS IN GROUND WATER
NEAR SITE FACILITIES

LOCATION CODE	FIRST QUARTER 1986 (uCi/ml)			SECOND QUARTER 1986 (uCi/ml)		
	ALPHA	BETA	TRITIUM	ALPHA	BETA	TRITIUM
WNWB0 2	< 6.6	1.28 ± 1.1 E-09	< 1.0	< 6.1	1.37 ± 1.0 E-09	< 1.0
WNWB0 3	< 6.0	2.44 ± 0.1 E-07	2.46 ± 1.1 E-07	E-09	3.38 ± 0.1 E-07	< 1.0
WNWB0 4	< 7.5	1.52 ± 0.2 E-08	2.75 ± 1.1 E-07	E-09	1.73 ± 0.2 E-08	3.92 ± 1.2 E-07
WNWB0 5	< 4.5	1.05 ± 0.9 E-09	1.34 ± 0.9 E-07	E-10	1.83 ± 1.0 E-09	< 1.0
WNWB0 6	< 2.6	3.74 ± 1.4 E-09	3.15 ± 0.2 E-06	E-09	3.38 ± 1.4 E-09	1.44 ± 0.2 E-06
WNWB0 7	< 1.8	2.91 ± 0.4 E-08	< 1.0	*****	*****	*****
				***** NDT ACCESSIBLE *****		

LOCATION CODE	THIRD QUARTER 1986 (uCi/ml)			FOURTH QUARTER 1986 (uCi/ml)		
	ALPHA	BETA	TRITIUM	ALPHA	BETA	TRITIUM
WNWB0 2	< 6.6	2.59 ± 1.1 E-09	1.63 ± 1.0 E-07	< 6.0	6.17 ± 1.4 E-09	3.81 ± 1.1 E-07
WNWB0 3	1.60 ± 1.6	2.65 ± 0.1 E-07	1.82 ± 1.0 E-07	E-09	3.50 ± 0.1 E-07	2.74 ± 1.1 E-07
WNWB0 4	< 6.3	4.15 ± 1.3 E-09	1.15 ± 0.1 E-06	E-10	8.49 ± 1.6 E-09	5.32 ± 1.1 E-07
WNWB0 5	< 1.1	1.78 ± 1.1 E-09	6.78 ± 1.2 E-07	E-10	1.54 ± 0.2 E-08	3.21 ± 1.1 E-07
WNWB0 6	< 5.5	1.35 ± 0.3 E-08	7.45 ± 1.2 E-07	E-09	1.04 ± 0.2 E-08	1.77 ± 0.2 E-06
WNWB6 3				E-10	8.69 ± 1.7 E-09	1.98 ± 0.2 E-06
WNWB6 4				E-09	9.03 ± 1.7 E-09	2.06 ± 0.2 E-06
WNWB6 5				E-09	1.65 ± .01 E-05	2.64 ± 0.1 E-05
WNWB6 6				3.1	1.82 ± 0.3 E-08	7.87 ± 1.2 E-07
WNWB6 7				E-09	8.49 ± 1.7 E-09	4.56 ± 1.1 E-07
WNWB6 8				E-09	5.76 ± 1.5 E-09	2.92 ± 0.2 E-06
WNWB6 9				E-09	8.06 ± 0.4 E-08	4.08 ± 0.2 E-06

TABLE C - 1.7
 (Sheet 1 of 2)
 CHEMICAL WATER QUALITY PARAMETERS OF GROUNDWATER
 NEAR SITE FACILITIES - 1986

LOCATION CODE	1ST QTR		2ND QTR		3RD QTR		4TH QTR	
	pH	CONDUCTIVITY (umhos/cm @ 25C)	pH	CONDUCTIVITY (umhos/cm @ 25C)	pH	CONDUCTIVITY (umhos/cm @ 25C)	pH	CONDUCTIVITY (umhos/cm @ 25C)
WNWBO - 2	7.88	366	7.72	260	7.66	290	7.74	305
WNWBO - 3	7.02	401	6.78	520	6.83	515	6.82	515
WNWBO - 4	7.48	687	7.16	645	6.66	536	7.07	637
WNWBO - 5	8.00	182	7.50	257	7.00	482	7.22	413
WNWBO - 6	6.84	1015	7.14	1185	6.47	2411	6.48	1356
WNWBO - 7	5.97	253	WELL OUT OF SERVICE	WELL OUT OF SERVICE	WELL OUT OF SERVICE	WELL OUT OF SERVICE	WELL OUT OF SERVICE	WELL OUT OF SERVICE

NON-RADIOLOGICAL MEASUREMENTS MADE DURING 4TH QTR

LOCATION CODE	pH	CONDUCTIVITY (umhos/cm @ 25C)	NO3	SO4	CL mg/l	F	TQC	PHENOLS
WNWBO - 2	7.74	305	2.0	9.5	16.7	<0.1	2.4	<0.1
WNWBO - 3	6.82	515						
WNWBO - 4	7.07	637						
WNWBO - 5	7.22	413	2.0	31.0	19.1	<0.1	2.4	<0.1
WNWBO - 6	6.48	1356	2.1	288	93.3	<0.1	4.4	<0.1
WNWBO - 7		WELL OUT	OF	SERVICE				
WNWBB6 - 3	7.37	726	4.6	36.6	67.7	<0.1	0.1	<0.1
WNWBB6 - 4	7.23	702	2.7	35.9	62.4	<0.1	<0.1	<0.1
WNWBB6 - 5	6.72	693	3.0	54.6	12.0	<0.1	8.9	<0.1
WNWBB6 - 6	6.66	2584	1.0	50.3	714	0.11	1.7	<0.1
WNWBB6 - 7	6.40	1015	6.3	227	6.4	<0.1	2.6	<0.1
WNWBB6 - 8	6.26	761	4.9	168	23.4	<0.1	10.0	<0.1
WNWBB6 - 9	6.97	641	7.3	38.4	10.9	<0.1	3.2	<0.1
WNSFO08	6.91	846	3.4	70.5	35.5	<0.1	2.9	0.1
WNGSEEP	6.24	430	2.8	50.3	30.9	<0.1	<2.0	0.1

TABLE C - 1.7
 (Sheet 2 of 2)
 CHEMICAL WATER QUALITY PARAMETERS OF GROUNDWATER
 NEAR SITE FACILITIES - 1986

LOCATION CODE	FE	MN	NA	CR	PB mg/l	BA	CD	H6	AS	SE	AG
WNWBO - 2	0.55	0.06	3.98	0.01	<0.01	0.05	<0.01	<0.01	<0.01	0.01	<0.01
WNWBO - 3			NOT ANALYZED	FOR METALS							
WNWBO - 4			NOT ANALYZED	FOR METALS							
WNWBO - 5	0.09	0.03	3.30	<0.01	0.01	0.03	<0.01	<0.01	<0.01	<0.01	<0.01
WNWBO - 6	0.31	1.26	51.00	<0.02	0.02	0.04	<0.01	<0.01	<0.01	0.01	<0.01
WNWBO - 7			WELL	NOT AVAILABLE							
WNWBB6 - 3	0.03	<0.01	17.90	<0.02	<0.01	0.15	<0.01	<0.01	<0.01	<0.01	<0.01
WNWBB6 - 4	0.12	0.05	17.10	<0.02	0.01	0.21	<0.01	<0.01	<0.01	<0.01	<0.01
WNWBB6 - 5	1.20	4.45	25.28	0.02	0.01	0.08	<0.01	<0.01	<0.01	<0.01	<0.01
WNWBB6 - 6	0.11	3.00	257.00	0.01	0.01	0.01	0.01	<0.01	<0.01	0.01	<0.01
WNWBB6 - 7	0.05	0.43	11.70	0.01	0.01	0.07	<0.01	<0.01	<0.01	<0.01	<0.01
WNWBB6 - 8	4.70	31.00	7.60	0.02	0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
WNWBB6 - 9	0.06	0.04	7.93	0.01	<0.01	0.15	<0.01	<0.01	<0.01	<0.01	<0.01
WNSP00B	0.09	1.83	39.90	<0.02	0.01	0.07	<0.01	<0.01	<0.01	<0.01	<0.01
WNGSEEP	0.02	<0.01	8.10	0.01	<0.01	0.07	<0.01	<0.01	<0.01	<0.01	<0.01

TABLE C-1.8

RADIOACTIVITY CONCENTRATIONS IN GROUND WATER
NEAR THE NRC DISPOSAL AREA

LOCATION CODE	FIRST QUARTER 1986 (uCi/ml)			SECOND QUARTER 1986 (uCi/ml)		
	ALPHA	BETA	TRITIUM	ALPHA	BETA	TRITIUM
WNWB21A	< 3.2	3.58 ± 1.4 E-09	7.07 ± 1.2 E-07	< 2.9	2.09 ± 1.2 E-09	4.67 ± 1.3 E-07
WNWB21B	< 2.1	5.14 ± 1.4 E-09	1.99 ± 0.1 E-06	< 1.9	5.73 ± 1.7 E-09	3.61 ± 1.3 E-07
WNWB21C	3.86 ± 3.2	9.36 ± 2.8 E-09	7.17 ± 1.2 E-07	< 1.8	< 3.3	< 1.0
WNWB22B	3.19 ± 2.4	5.93 ± 1.1 E-08	< 1.0	1.02 ± 0.6	1.41 ± 0.4 E-08	< 1.0
WNWB24A1	< 3.2	5.33 ± 1.6 E-09	5.88 ± 0.2 E-05	< 2.1	3.65 ± 1.3 E-09	4.07 ± 0.1 E-05
WNWB24A2	3.87 ± 3.6	6.90 ± 2.6 E-09	4.59 ± 1.1 E-07	4.05 ± 3.5	2.29 ± 1.4 E-09	2.74 ± 1.2 E-07
WNWB24A3	< 2.0	3.89 ± 1.3 E-09	4.69 ± 1.1 E-07	< 1.5	1.64 ± 1.4 E-09	2.64 ± 1.2 E-07
WNWB32D	6.17 ± 4.7	1.07 ± 0.4 E-08	2.50 ± 1.1 E-07	< 2.3	8.94 ± 1.8 E-09	1.15 ± 1.1 E-07

LOCATION CODE	THIRD QUARTER 1986 (uCi/ml)			FOURTH QUARTER 1986 (uCi/ml)		
	ALPHA	BETA	TRITIUM	ALPHA	BETA	TRITIUM
WNWB21A	< 2.5	4.44 ± 1.6 E-09	4.54 ± 1.1 E-07	< 1.5	3.90 ± 1.4 E-09	3.45 ± 1.1 E-07
WNWB21B	< 2.3	3.25 ± 1.4 E-09	5.06 ± 1.1 E-07	< 2.2	5.55 ± 1.5 E-09	1.41 ± 1.1 E-07
WNWB21C	< 1.9	2.93 ± 2.2 E-09	< 1.0	< 1.1	6.47 ± 3.1 E-09	< 1.0
WNWB22B	< 1.6	4.43 ± 1.5 E-09	< 1.0	7.71 ± 4.7	1.77 ± 0.2 E-08	5.49 ± 1.1 E-07
WNWB24A1	< 1.5	4.84 ± 1.5 E-09	3.68 ± 0.1 E-05	5.25 ± 4.7	7.61 ± 1.8 E-09	3.10 ± 0.1 E-05
WNWB24A2	< 3.2	5.61 ± 1.9 E-09	4.65 ± 1.1 E-07	< 1.6	7.47 ± 1.7 E-09	2.09 ± 1.1 E-07
WNWB24A3	< 2.9	2.84 ± 1.4 E-09	6.12 ± 1.1 E-07	2.43 ± 2.2	3.21 ± 1.6 E-09	1.39 ± 1.1 E-07
WNWB32D	2.14 ± 2.1	9.70 ± 1.8 E-09	1.62 ± 1.0 E-07	5.48 ± 3.8	1.95 ± 0.4 E-08	< 1.0
WNWB610				< 7.3	1.07 ± 0.2 E-08	< 1.0
WNWB611				< 2.2	1.50 ± 0.2 E-08	< 1.0

TABLE C - 1.9
 (Sheet 1 of 2)
 CHEMICAL WATER QUALITY PARAMETERS OF GROUNDWATER
 NEAR THE NRC DISPOSAL AREA - 1986

LOCATION CODE	1ST QTR		2ND QTR		3RD QTR		4TH QTR	
	PH	CONDUCTIVITY (umhos/cm @ 25C)	PH	CONDUCTIVITY (umhos/cm @ 25C)	PH	CONDUCTIVITY (umhos/cm @ 25C)	PH	CONDUCTIVITY (umhos/cm @ 25C)
WNW82-1A	7.12	1341	7.20	1279	7.00	1228	7.25	1194
WNW82-1B	7.25	1400	7.14	1447	6.92	1366	7.42	1333
WNW82-1C	7.59	548	7.83	537	7.82	515	7.77	484
WNW82-2A			WELL NOT AVAILABLE					
WNW82-2B	7.35	812	7.53	808	7.48	802	7.62	808
WNW82-4A1	7.02	1403	7.02	1294	6.80	1396	7.01	1402
WNW82-4A2	6.98	1490	6.83	1489	6.79	1495	6.84	1500
WNW82-4A3	6.83	1484	6.94	1452	6.73	1503	6.91	1425
WNW75-G1	11.67	663	11.33	492	11.39	510	11.80	669
WNW75-G2	10.44	253	10.02	246	10.26	233	WELL DRY	
WNW75-G3	8.51	305	8.18	304	8.15	316	WELL DRY	
WNW83-2D	12.12	2082	11.55	1908	11.86	1137	12.10	1095
WNW86-10	NEW WELL	NOT READY FOR SAMPLING	UNTIL 4TH QTR				8.75	467
WNW86-11	NEW WELL	NOT READY FOR SAMPLING	UNTIL 4TH QTR				9.46	592

DRY WELLS NOT ANALYZED: WNW82-1D, WNW82-2C, WNW82-3A, WNW82-3B, WNW82-3C, WNW83-3D, WNW82-4B, WNW82-4C

LOCATION CODE	NON-RADIOLOGICAL MEASUREMENTS MADE DURING 4TH QTR						
	PH	CONDUCTIVITY (umhos/cm @ 25C)	NO3	SO4	CL	F	TDC
WNW82-1D		DRY	WELL NOT SAMPLED				
WNW83-2D	12.10	1095	<0.5	18.1	09.6	0.2	180.0
WNW86-10	8.75	467	2.2	67.9	1.7	<0.1	9.2
WNW86-11	9.46	592	<0.5	22.7	0.4	<0.1	11.0

TABLE C - 1.9
 (Sheet 2 of 2)
 CHEMICAL WATER QUALITY PARAMETERS OF GROUNDWATER
 NEAR THE NRC DISPOSAL AREA - 4TH QTR 1985

LOCATION CODE	FE	MN	NA	CR	PB	BA	CD	HG	AS	SE	AG
	MG/L										
WNW82 -1D	DRY	NO	SAMPLES	ANALYZED							
WNW83 -2D	0.02	<0.01	20.5	<0.02	0.01	0.05	<0.01	<0.01	<0.01	<0.01	<0.01
WNW886-10	0.03	0.05	44.3	<0.02	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01
WNW886-11	0.28	<0.01	83.3	0.006	<0.01	0.06	<0.01	<0.01	<0.01	<0.02	<0.01

TABLE C-1.10
 RADIOACTIVITY CONCENTRATIONS IN POTABLE WELL WATER
 AROUND THE WVDP SITE - 1986
 (uCi/ml)

SAMPLE I.D.	ALPHA	BETA	TRITIUM	Cs - 137
WFWEL 01	< 4.5 E-10	3.53 ± 1.2 E-09	< 1.0 E-07	< 2.1 E-08
WFWEL 03	< 8.5 E-10	3.71 ± 1.3 E-09	< 1.0 E-07	< 2.1 E-08
WFWEL 04	< 1.8 E-09	3.07 ± 1.4 E-09	< 1.0 E-07	< 2.1 E-08
WFWEL 06	< 5.9 E-10	3.40 ± 1.2 E-09	2.59 ± 1.1 E-07	< 2.1 E-08
WFWEL 07	< 1.0 E-09	2.86 ± 1.2 E-09	< 1.0 E-07	< 2.1 E-08

WFWEL. RPT

TABLE C - 1.11

Radioactivity of Stream Sediment Around WVDP Site In 1986

ID	Date	Gross Alpha	Gross Beta	Concentration (uCi/g) (dry weight from upper 15 cm)				
				K-40	Sr-90	Cs-137	Pu-239	Am-241
SFPCSED	May 1986	6.4 ± 6.8 E-06	2.62 ± 0.8 E-05	1.24 ± 0.5 E-05	1.00 ± 1.7 E-08	6.32 ± 2.9 E-08	6.01 ± 4.9 E-09	<4 E-09
SFPCSED	June 1986	3.1 ± 4.4 E-06	2.14 ± 0.7 E-05	1.18 ± 0.2 E-05	2.54 ± 1.7 E-08	1.06 ± 0.2 E-06	2.73 ± 2.3 E-09	7.75 ± 7.8 E-09
SFPCSED	May 1986	6.3 ± 5.8 E-06	2.79 ± 0.9 E-05	1.35 ± 0.2 E-05	6.49 ± 1.4 E-08	2.70 ± 0.2 E-06		
SFPCSED	May 1986	4.2 ± 5.0 E-06	3.37 ± 0.9 E-05	1.03 ± 0.2 E-05	1.76 ± 0.3 E-07	7.56 ± 0.3 E-06		
SFPCSED	May 1986	<1.2 E-05	2.34 ± 1.0 E-05	1.14 ± 0.1 E-05	<3 E-08	6.10 ± 3.1 E-08		
SFPCSED	Dec. 1986	<1.1 E-05	2.63 ± 1.3 E-05	9.85 ± 0.5 E-06	<6 E-08	3.33 ± 2.9 E-08	2.67 ± 3.2 E-09	2.68 ± 5.4 E-09
SFPCSED	Dec. 1986	5.4 ± 5.4 E-05	3.33 ± 1.2 E-05	9.88 ± 0.4 E-06	3.71 ± 2.0 E-08	4.86 ± 0.4 E-07	2.60 ± 2.6 E-09	1.80 ± 1.5 E-08
SFPCSED	Dec. 1986	3.3 ± 4.9 E-06	3.68 ± 1.0 E-05	9.62 ± 0.5 E-06	6.59 ± 3.3 E-08	2.82 ± 0.1 E-06		
SFPCSED	Dec. 1986	2.2 ± 5.8 E-06	1.52 ± 0.8 E-05	8.70 ± 0.5 E-06	1.66 ± 1.0 E-08	1.97 ± 0.1 E-06		
SFPCSED	Dec. 1986	7.6 ± 16.0 E-06	2.44 ± 0.9 E-05	9.57 ± 0.5 E-06	8.49 ± 11.9 E-09	<3.21 ± E-08		

TABLE C-1.12

1986 CONTRIBUTION BY NEW YORK STATE LOW LEVEL WASTE DISPOSAL AREA
TO RADIOACTIVITY IN WWDP LIQUID EFFLUENTS
(CI)

	GRUSS ALPHA	GRUSS BETA	TRITIUM	Sr-90	I-129	Cs-137
1986 TOTALS	$3.20 \pm 3.1 \text{ E-06}$	$1.50 \pm 0.1 \text{ E-03}$	$8.86 \pm 0.3 \text{ E-02}$	$9.08 \pm 0.2 \text{ E-04}$	$< 1.0 \text{ E-06}$	$< 2.6 \text{ E-05}$

FIGURE C-1.1
 GROSS BETA CONCENTRATIONS IN
 SURFACE WATER DOWNSTREAM OF WVDP - 1986

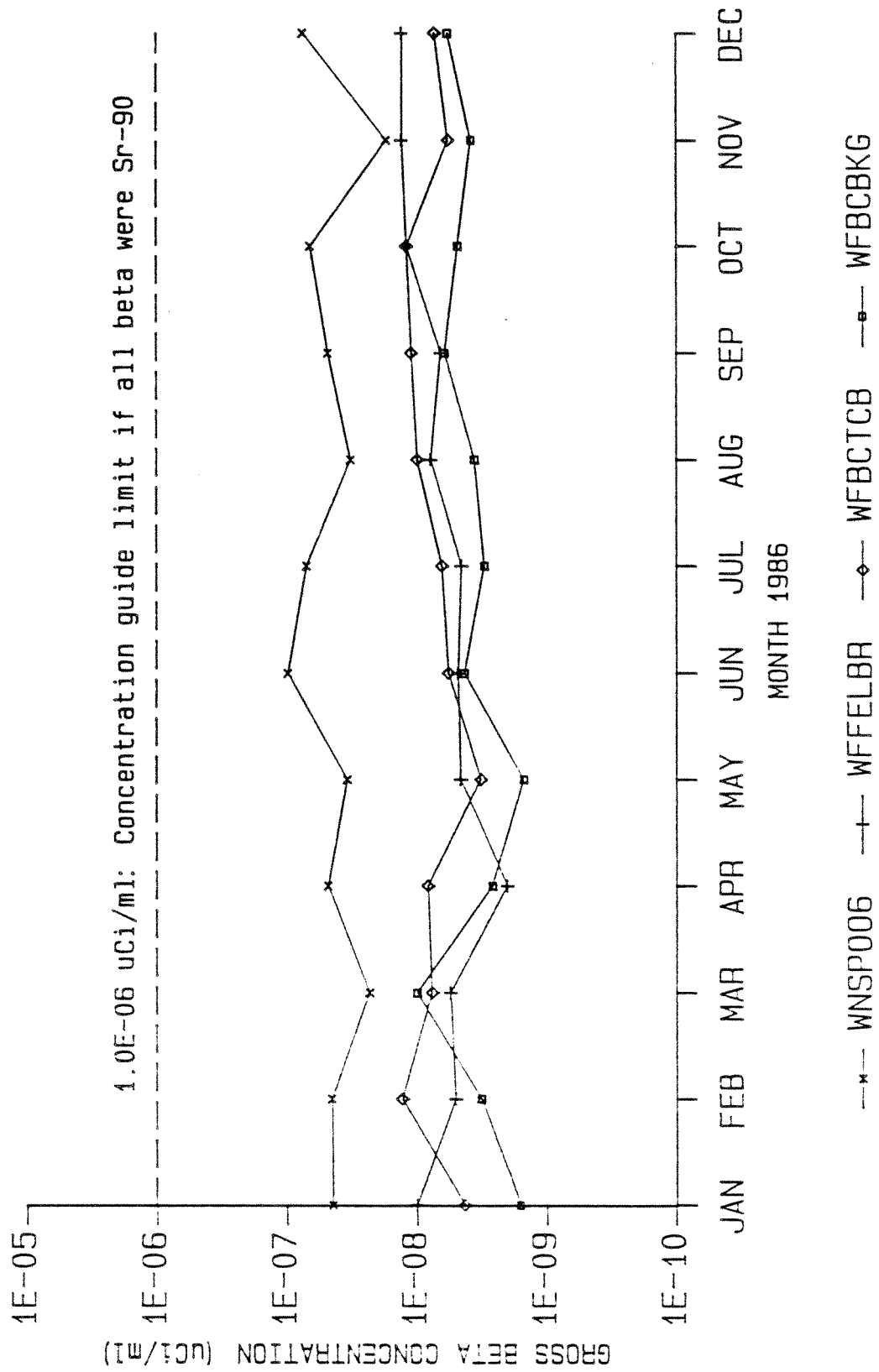


FIGURE C-1.2
 TRENDS OF GROSS BETA ACTIVITY IN SURFACE WATER FROM
 CATTARAUGUS CREEK (WFFELBR) 1983-1986

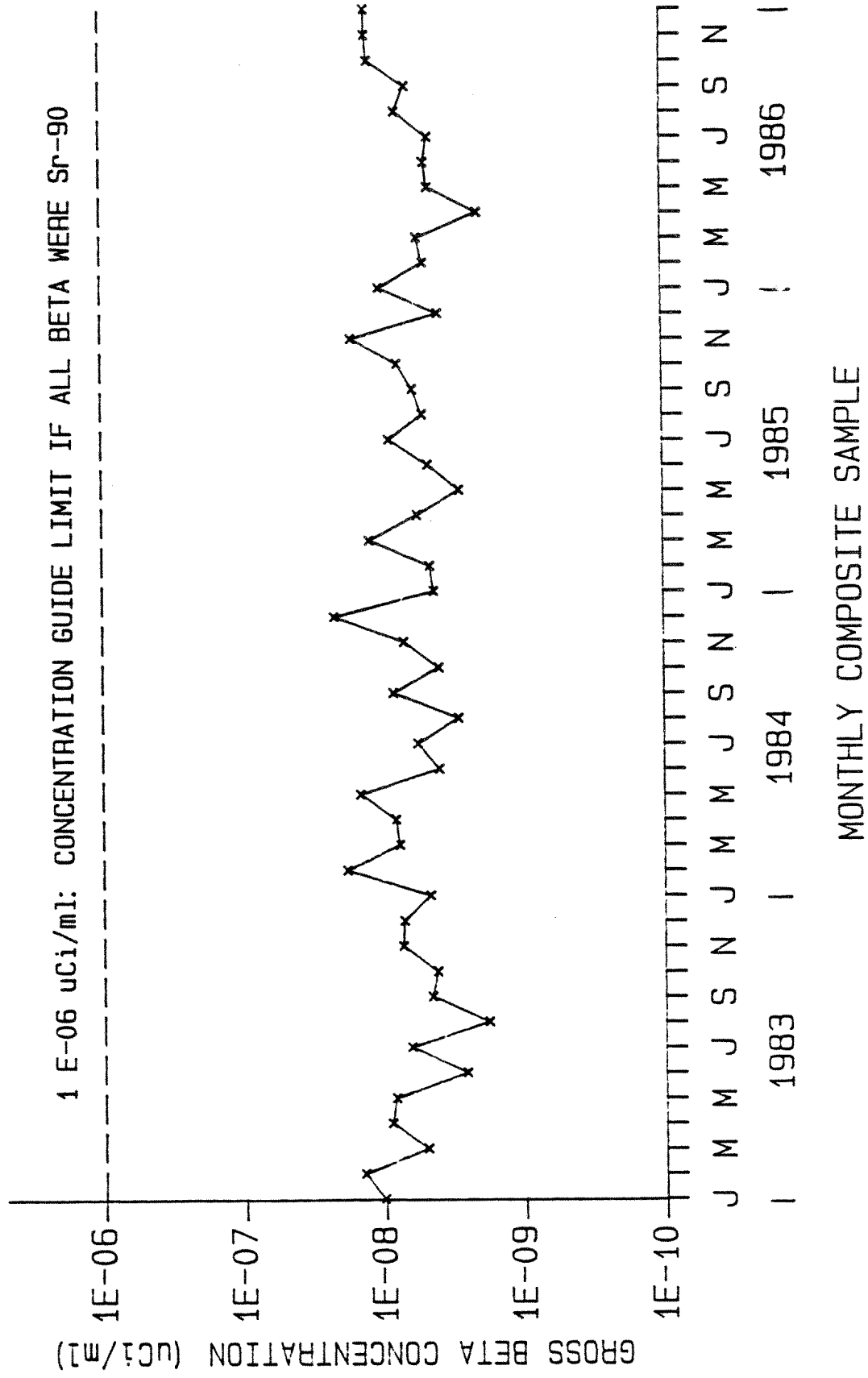
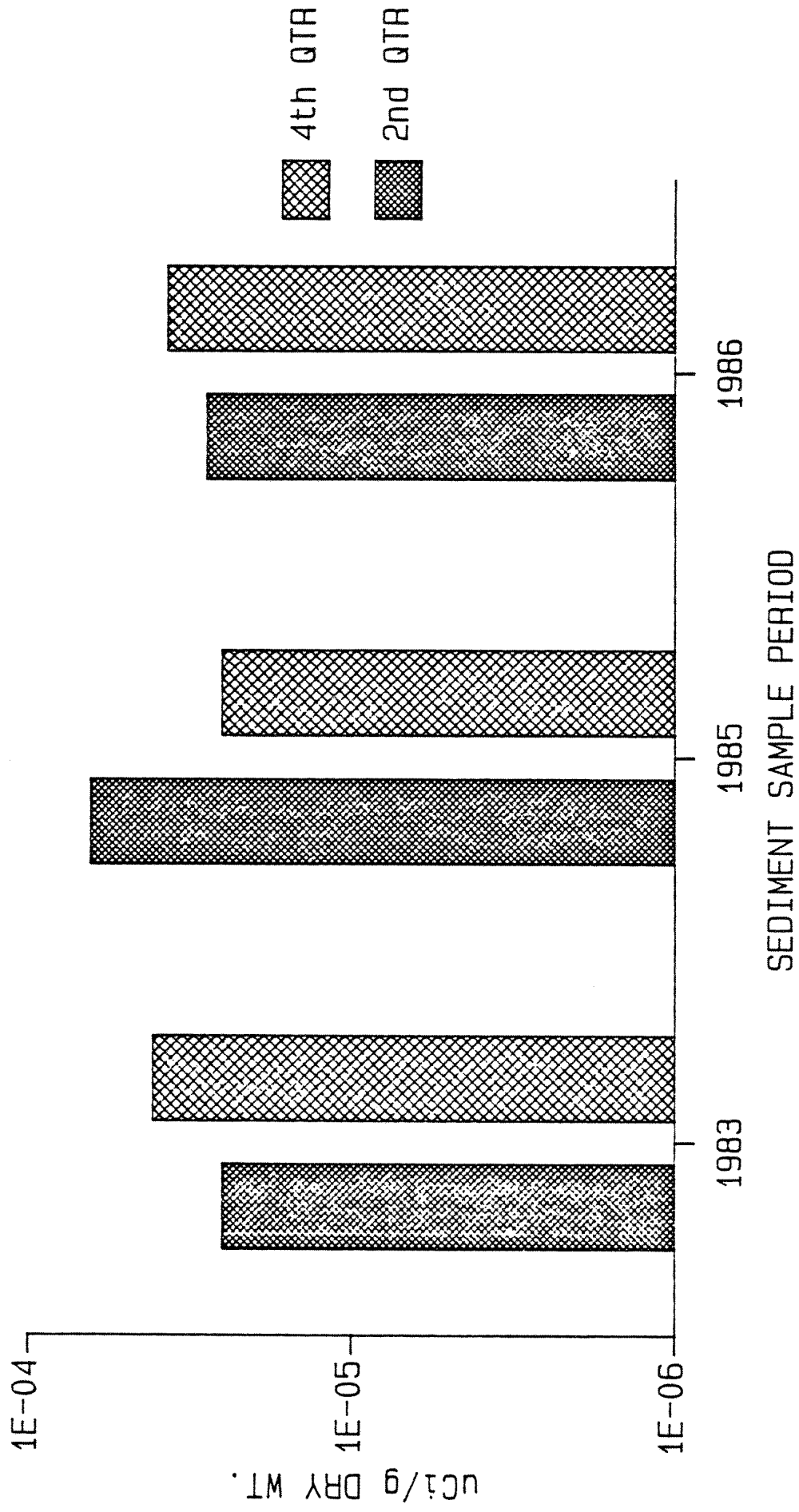


FIGURE C-1.3
 TRENDS OF GROSS BETA ACTIVITY IN SEDIMENT FROM
 BUTTERMILK CREEK (SFTCS) 1983, 1985, & 1986



APPENDIX C-2

SUMMARY OF AIR MONITORING DATA

TABLE C-2.1.1

AIRBORNE RADIOACTIVE EFFLUENT ACTIVITY MONTHLY
TOTALS FROM MAIN VENTILATION STACK (ANSTACK) CURIES
1986

MONTH	ALPHA	BETA	TRITIUM
JAN	3.07 ± 0.9 E-07	1.55 ± 0.05 E-05	NA
FEB	2.10 ± 0.7 E-07	1.35 ± 0.05 E-05	NA
MAR	1.34 ± 0.7 E-07	5.07 ± 0.34 E-06	NA
APR	1.93 ± 0.7 E-07	1.32 ± 0.05 E-05	2.38 ± 0.1 E-02
MAY	2.30 ± 0.9 E-07	4.17 ± 0.09 E-05	3.03 ± 0.1 E-02
JUN	1.02 ± 0.1 E-06	6.95 ± 0.02 E-04	3.98 ± 0.1 E-02
JUL	3.29 ± 0.8 E-07	4.54 ± 0.02 E-04	3.47 ± 0.1 E-02
AUG	2.90 ± 0.9 E-07	1.52 ± 0.06 E-05	4.80 ± 0.1 E-02
SEP	1.35 ± 0.6 E-07	1.83 ± 0.05 E-05	3.88 ± 0.1 E-02
OCT	1.43 ± 0.6 E-07	6.59 ± 0.09 E-05	2.58 ± 0.1 E-02
NOV	3.06 ± 0.9 E-07	4.06 ± 0.09 E-05	3.57 ± 0.1 E-02
DEC	4.55 ± 1.0 E-07	1.32 ± 0.01 E-04	3.06 ± 0.1 E-02
TOTAL FOR 1986	3.75 ± 0.3 E-06	1.51 ± .004 E-03	3.08 ± 0.03 E-01*

* Prorated to 4.1 ± 0.04 E-01 due to lack of 1st Quarter data.

TABLE C-2.1.1.2
 1986 AIRBORNE RADIOACTIVE EFFLUENT ACTIVITY QUARTERLY TOTALS
 FROM MAIN VENTILATION STACK (ANSTACK)
 (CURIES)

	CD-60	SR-90	CS-134	CS-137	EU-154	I-129
1ST QTR	2.86 ± 0.8 E-07	7.88 ± 0.9 E-06	8.05 ± 1.1 E-06	4.19 ± 6.0 E-08	1.17 ± .03 E-05	1.38 ± 0.4 E-07
2ND QTR	8.29 ± 1.4 E-07	2.40 ± 0.3 E-04	1.40 ± 0.2 E-05	7.15 ± 2.0 E-07	2.16 ± .01 E-04	6.79 ± 2.5 E-07
3RD QTR	5.37 ± 1.3 E-07	1.67 ± 0.2 E-04	8.54 ± 1.2 E-06	4.00 ± 1.7 E-07	1.43 ± .01 E-04	< 2.2 E-07
4TH QTR	2.99 ± 0.9 E-07	6.02 ± 0.7 E-05	9.73 ± 1.3 E-06	2.75 ± 1.0 E-07	1.03 ± .01 E-04	4.67 ± 2.5 E-07
1986 TOTALS	1.95 ± 0.2 E-06	4.75 ± 0.4 E-04	3.26 ± 0.2 E-05	1.43 ± 0.3 E-06	4.74 ± .02 E-04	1.50 ± 0.4 E-06
	U-234	U-235	U-238	PU-238	PU-239	AM-241
1ST QTR	1.95 ± 0.3 E-08	5.53 ± 7.3 E-10	7.16 ± 1.5 E-09	8.16 ± 0.6 E-08	9.51 ± 0.7 E-08	2.70 ± 0.2 E-07
2ND QTR	1.29 ± 0.2 E-08	1.64 ± 0.8 E-09	8.28 ± 1.6 E-09	1.59 ± 0.1 E-07	1.92 ± 0.1 E-07	8.19 ± 0.5 E-07
3RD QTR	1.07 ± 0.3 E-08	1.67 ± 1.2 E-09	6.77 ± 2.0 E-09	1.17 ± 0.2 E-07	1.68 ± 0.3 E-07	2.70 ± 0.3 E-07
4TH QTR	9.60 ± 2.4 E-09	3.49 ± 6.8 E-10	8.86 ± 2.4 E-09	1.45 ± 0.1 E-07	2.13 ± 0.2 E-07	7.93 ± 0.8 E-07
1986 TOTALS	5.27 ± 0.5 E-08	4.21 ± 1.8 E-09	3.11 ± 0.4 E-08	5.03 ± 0.3 E-07	6.68 ± 0.4 E-07	2.15 ± 0.1 E-06

TABLE C-2.1.3

AIRBORNE EFFLUENT ACTIVITY COMPARISON
WITH DOE GUIDELINES

ISOTOPE	1985 MAIN STACK EXHAUST*			
	TOTAL uCi RELEASED	AVG CONC (uCi/m ³)	DCG (uCi/m ³)	PERCENT CF DCG
Gross Alpha	3.75 E+00	4.2 E-09	2 E-08 ¹	21
Gross Beta	1.51 E+03	1.7 E-06	9 E-06 ²	19
H-3	4.10 E+05	4.6 E-04	2 E-01	0.2
Co-60	1.95 E+00	2.2 E-09	8 E-05	<0.1
Sr-90	4.75 E+02	5.3 E-07	9 E-06	5.9
I-129	4.03 E+01	4.5 E-08	7 E-05	<0.1
Cs-134	1.43 E+00	1.6 E-09	2 E-04	<0.1
Cs-137	4.74 E+02	5.3 E-07	4 E-04	0.1
Eu-154	1.50 E+00	1.7 E-09	5 E-05	<0.1
U-234 ³	5.27 E-02	5.9 E-11	9 E-08	<0.1
U-235 ³	4.21 E-03	4.7 E-12	1 E-07	<0.1
U-238 ³	3.11 E-02	3.5 E-11	1 E-07	<0.1
Pu-238	5.03 E-01	5.6 E-10	3 E-08	1.9
Pu-239	6.68 E-01	7.5 E-10	2 E-08	3.8
Am-241	2.15 E+00	2.4 E-09	2 E-08	12.0
				23.9 ⁴

Notes:

* @ 60,000 cfm = 8.93 E+8 m³/yr³
(Total uCi/yr) / (8.93 E+8 m³/yr) = uCi/m³ avg

1: as Am-241 2: as Sr-90

3 U total (ug) = 9.451 E+4 Avg U ug/m³ = 1.058 E-04

4 Total Percent DCG for all releases

TABLE C - 2.2.1

RADIOACTIVITY CONCENTRATIONS IN AIRBORNE PARTICULATE
AROUND WVDP ENVIRONS - 1986

		AIR SAMPLER AT FOX VALLEY (AFFXVRD)		
		μCi/m ³		
	ALPHA	BETA	SR-90	CS-137
JAN	1.44 ± 1.0 E-15	2.36 ± 0.5 E-14		
FEB	1.84 ± 1.5 E-15	2.29 ± 0.5 E-14		
MAR	1.33 ± 1.4 E-15	2.40 ± 0.6 E-14		
1ST QTR			6.62 ± 4.5 E-17	< 9.8 E-16
APR	1.23 ± 1.4 E-15	1.71 ± 0.5 E-14		
MAY	1.17 ± 1.2 E-15	1.79 ± 0.1 E-13		
JUNE	1.38 ± 1.4 E-15	2.76 ± 0.6 E-14		
2ND QTR			1.44 ± 0.2 E-15	1.86 ± 0.2 E-14
JUL	1.03 ± 1.2 E-15	3.17 ± 0.6 E-14		
AUG	1.96 ± 1.5 E-15	3.06 ± 0.7 E-14		
SEP	1.22 ± 1.2 E-15	3.57 ± 0.6 E-14		
3RD QTR			1.07 ± 0.5 E-16	< 9.3 E-16
OCT	1.65 ± 1.5 E-15	4.27 ± 0.7 E-14		
NOV	1.04 ± 1.1 E-15	3.79 ± 0.6 E-14		
DEC	2.42 ± 1.5 E-15	5.25 ± 0.7 E-14		
4TH QTR			5.02 ± 5.0 E-17	< 6.5 E-16

TABLE C - 2.2.2
 RADIOACTIVITY CONCENTRATIONS IN AIRBORNE PARTICULATE
 AROUND WVDP ENVIRONS - 1986

AIR SAMPLER AT ROCK SPRINGS ROAD (AFRSPRD)		uCi/m ³	
	ALPHA	BETA	CS-137
JAN	0.85 ± 1.0 E-15	1.93 ± 0.4 E-14	
FEB	1.04 ± 1.0 E-15	2.01 ± 0.4 E-14	
MAR	1.14 ± 1.0 E-15	1.99 ± 0.4 E-14	
1ST QTR			< 1.1 E-16
APR	7.26 ± 8.2 E-16	1.31 ± 0.4 E-14	
MAY	4.98 ± 6.3 E-16	1.27 ± 0.1 E-13	
JUNE	4.53 ± 6.1 E-16	2.78 ± 0.4 E-14	
2ND QTR			2.22 ± 0.4 E-16
JUL	6.08 ± 8.6 E-16	1.72 ± 0.4 E-14	
AUG	8.07 ± 8.2 E-16	1.82 ± 0.4 E-14	
SEP	5.92 ± 7.6 E-16	2.56 ± 0.5 E-14	
3RD QTR			3.22 ± 3.2 E-17
OCT	8.89 ± 9.1 E-16	2.80 ± 0.5 E-14	
NOV	1.12 ± 0.9 E-15	2.72 ± 0.5 E-14	
DEC	1.70 ± 1.1 E-15	3.74 ± 0.5 E-14	
4TH QTR			6.17 ± 3.3 E-17
			< 7.3 E-16
			< 7.8 E-16

TABLE C - 2.2.3

RADIOACTIVITY CONCENTRATIONS IN AIRBORNE PARTICULATE
AROUND WNDP ENVIRONS - 1986

AIR SAMPLER AT ROUTE 240 (AFRT240)
μCi/m³

	ALPHA	BETA	SR-90	CS-137
JAN	0.79 ± 1.2 E-15	1.70 ± 0.5 E-14		
FEB	1.41 ± 1.5 E-15	2.11 ± 0.6 E-14		
MAR	1.28 ± 1.7 E-15	2.19 ± 0.7 E-14	< 8.2 E-17	< 9.6 E-16
1ST QTR				
APR	1.04 ± 1.0 E-15	1.14 ± 0.4 E-14		
MAY	1.05 ± 0.8 E-15	1.39 ± 0.1 E-13		
JUNE	5.67 ± 6.3 E-16	2.56 ± 0.4 E-14	2.38 ± 0.4 E-16	1.48 ± 0.1 E-14
2ND QTR				
JUL	5.22 ± 6.6 E-16	1.41 ± 0.3 E-14		
AUG	5.73 ± 6.6 E-16	1.68 ± 0.4 E-14		
SEP	4.89 ± 6.3 E-16	1.45 ± 0.3 E-14	4.31 ± 2.6 E-17	< 5.1 E-16
3RD QTR				
OCT	8.03 ± 7.9 E-16	1.80 ± 0.4 E-14		
NOV	4.56 ± 5.8 E-16	1.59 ± 0.3 E-14		
DEC	9.43 ± 8.2 E-16	2.81 ± 0.4 E-14	< 6.3 E-17	< 4.4 E-16
4TH QTR				

TABLE C - 2.2.4

RADIOACTIVITY CONCENTRATIONS IN AIRBORNE PARTICULATE
AROUND WVDP ENVIRONS - 1986

AIR SAMPLER AT SPRINGVILLE (AFSPRVL)
UCI/m³

	ALPHA	BETA	SR-90	CS-137
JAN	1.29 ± 1.0 E-15	2.19 ± 0.4 E-14		
FEB	1.02 ± 0.9 E-15	1.81 ± 0.4 E-14		
MAR	1.13 ± 0.9 E-15	1.71 ± 0.3 E-14		
1ST QTR			5.73 ± 5.3 E-17	< 6.7 E-16
APR	9.47 ± 7.4 E-16	2.73 ± 0.3 E-14		
MAY	6.12 ± 6.5 E-16	1.36 ± 0.1 E-13		
JUNE	7.02 ± 6.7 E-16	2.36 ± 0.4 E-14		
2ND QTR			3.18 ± 0.6 E-16	1.31 ± 0.1 E-14
JUL	6.02 ± 6.4 E-16	1.60 ± 0.3 E-14		
AUG	9.40 ± 7.2 E-16	1.74 ± 0.3 E-14		
SEP	8.05 ± 6.7 E-16	1.77 ± 0.3 E-14		
3RD QTR			< 3.3 E-17	< 3.8 E-16
OCT	8.86 ± 6.9 E-16	2.21 ± 0.3 E-14		
NOV	8.08 ± 6.5 E-16	1.65 ± 0.3 E-14		
DEC	1.59 ± 0.9 E-15	2.87 ± 0.4 E-14		
4TH QTR			6.09 ± 2.4 E-17	< 4.6 E-16

TABLE C - 2.2.5

RADIOACTIVITY CONCENTRATIONS IN AIRBORNE PARTICULATE
AROUND WVDP ENVIRONS - 1986

AIR SAMPLER AT THOMAS CORNERS (AFTCORD)
UCI/m³

	ALPHA	BETA	SR-90	CS-137
JAN	1.18 ± 1.1 E-15	3.74 ± 0.6 E-14		
FEB	0.95 ± 1.2 E-15	2.02 ± 0.5 E-14		
MAR	1.75 ± 1.4 E-15	2.07 ± 0.5 E-14		
1ST QTR			< 6.7 E-17	< 8.5 E-16
APR	1.26 ± 1.2 E-15	1.38 ± 0.4 E-14		
MAY	1.16 ± 1.2 E-15	1.35 ± 0.1 E-13		
JUNE	1.38 ± 1.2 E-15	2.62 ± 0.5 E-14		
2ND QTR			4.13 ± 1.0 E-16	1.10 ± 0.1 E-14
JUL	4.46 ± 8.4 E-16	1.45 ± 0.4 E-14		
AUG	5.17 ± 7.7 E-16	1.48 ± 0.4 E-14		
SEP	1.19 ± 1.0 E-15	1.60 ± 0.5 E-14		
3RD QTR			2.28 ± 0.5 E-16	< 7.4 E-16
OCT	1.00 ± 0.9 E-15	2.36 ± 0.5 E-14		
NOV	1.17 ± 0.9 E-15	2.07 ± 0.4 E-14		
DEC	1.47 ± 1.1 E-15	2.72 ± 0.5 E-14		
4TH QTR			< 5.0 E-17	7.22 ± 4.8 E-16

C2-9

TABLE C - 2.2.6

RADIOACTIVITY CONCENTRATIONS IN AIRBORNE PARTICULATE
AROUND WVDP ENVIRONS - 1986

AIR SAMPLER AT WEST VALLEY (AFWEVAL)
UCI/m³

	ALPHA	BETA	SR-90	CS-137
JAN	1.02 ± 0.9 E-15	2.02 ± 0.4 E-14		
FEB	1.07 ± 0.8 E-15	1.82 ± 0.3 E-14		
MAR	8.80 ± 8.0 E-16	1.94 ± 0.3 E-14	< 3.9 E-17	< 5.1 E-16
1ST QTR				
APR	1.06 ± 0.8 E-15	1.18 ± 0.3 E-14		
MAY	7.00 ± 5.6 E-16	1.09 ± 0.1 E-13		
JUNE	4.70 ± 4.8 E-16	2.19 ± 0.3 E-14		
2ND QTR			1.66 ± 0.3 E-16	1.12 ± 0.1 E-14
JUL	5.36 ± 6.0 E-16	1.44 ± 0.3 E-14		
AUG	7.50 ± 5.8 E-16	1.51 ± 0.3 E-14		
SEP	7.76 ± 6.1 E-16	1.73 ± 0.3 E-14		
3RD QTR			1.31 ± 0.3 E-16	3.54 ± 1.9 E-16
OCT	7.97 ± 6.0 E-16	1.92 ± 0.3 E-14		
NOV	7.39 ± 5.5 E-16	1.76 ± 0.3 E-14		
DEC	9.95 ± 6.9 E-16	2.31 ± 0.3 E-14		
4TH QTR			2.59 ± 2.4 E-17	< 3.7 E-16

TABLE C - 2.2.7

RADIOACTIVITY CONCENTRATIONS IN AIRBORNE PARTICULATE
AROUND WVDP ENVIRONS - 1986

AIR SAMPLER AT GREAT VALLEY (AFGRVAL)
UCI/m³

	ALPHA	BETA	SR-90	CS-137
JAN	4.39 ± 5.0 E-16	1.30 ± 0.2 E-14		
FEB	5.42 ± 5.3 E-16	1.26 ± 0.2 E-14		
MAR	6.60 ± 5.6 E-16	1.36 ± 0.2 E-14		
1ST QTR			7.42 ± 3.9 E-17	< 2.9 E-16
APR	5.97 ± 5.5 E-16	1.03 ± 0.2 E-14		
MAY	7.36 ± 6.1 E-16	1.25 ± 0.1 E-13		
JUNE	5.93 ± 5.9 E-16	2.54 ± 0.4 E-14		
2ND QTR			3.59 ± 0.8 E-16	1.43 ± 0.1 E-14
JUL	5.98 ± 6.6 E-16	1.74 ± 0.3 E-14		
AUG	7.10 ± 5.6 E-16	1.78 ± 0.3 E-14		
SEP	9.25 ± 7.2 E-16	2.89 ± 0.4 E-14		
3RD QTR			1.62 ± 0.4 E-16	2.99 ± 2.9 E-16
OCT	8.26 ± 7.1 E-16	2.73 ± 0.4 E-14		
NOV	9.40 ± 6.6 E-16	2.05 ± 0.3 E-14		
DEC	1.40 ± 0.9 E-15	2.77 ± 0.4 E-14		
4TH QTR			< 5.5 E-17	< 6.2 E-16

TABLE C-2.3.1

RADIOACTIVITY IN FALLOUT (nCi/square metre/mo)

DUTCH HILL (AFDHFOF)				FOX VALLEY ROAD (AFFXFOP)			
MONTH - 1986	GROSS ALPHA	GROSS BETA	H-3 (uCi/ml)	MONTH - 1986	GROSS ALPHA	GROSS BETA	H-3 (uCi/ml)
JANUARY	1.11 E-02	0.10 ± 0.02	<1.0 E-07	JANUARY	3.86 E-02	0.19 ± 0.02	<1.0 E-07
FEBRUARY	1.45 E-02	0.12 ± 0.02	<1.0 E-07	FEBRUARY	3.11 E-02	0.31 ± 0.03	<1.0 E-07
MARCH	1.48 E-02	0.21 ± 0.03	SAMPLE DRY	MARCH	1.34 E-02	0.33 ± 0.03	SAMPLE DRY
APRIL	2.25 E-02	0.17 ± 0.02	<1.0 E-07	APRIL	1.14 E-02	0.16 ± 0.02	<1.0 E-07
MAY	5.45 E-02	0.67 ± 0.06	<1.0 E-07	MAY	3.86 E-02	0.73 ± 0.06	<1.0 E-07
JUNE	4.53 E-02	0.73 ± 0.05	<1.0 E-07	JUNE	6.40 E-02	0.71 ± 0.05	<1.0 E-07
JULY	6.66 E-02	0.55 ± 0.04	<1.0 E-07	JULY	9.10 E-02	0.62 ± 0.04	<1.0 E-07
AUGUST	3.86 E-02	0.30 ± 0.03	<1.0 E-07	AUGUST	2.84 E-02	0.38 ± 0.03	<1.0 E-07
SEPTEMBER	3.11 E-02	0.35 ± 0.03	<1.0 E-07	SEPTEMBER	1.04 E-01	0.33 ± 0.03	<1.0 E-07
OCTOBER	2.16 E-01	0.55 ± 0.04	<1.0 E-07	OCTOBER	2.88 E-02	0.53 ± 0.04	1.94 ± 1.2 E-07
NOVEMBER	2.22 E-02	0.19 ± 0.03	<1.0 E-07	NOVEMBER	6.96 E-02	0.30 ± 0.03	<1.0 E-07
DECEMBER	1.63 E-02	0.28 ± 0.03	1.79 ± 1.1 E-07	DECEMBER	1.97 E-02	0.39 ± 0.03	3.29 ± 1.1 E-07

ROUTE 240 (AF24FOP)				THOMAS CORNERS ROAD (AFTCFOP)			
MONTH - 1986	GROSS ALPHA	GROSS BETA	H-3 (uCi/ml)	MONTH - 1986	GROSS ALPHA	GROSS BETA	H-3 (uCi/ml)
JANUARY	1.49 E-02	0.11 ± 0.02	<1.0 E-07	JANUARY	2.75 E-02	0.17 ± 0.02	<1.0 E-07
FEBRUARY	2.29 E-02	0.21 ± 0.02	<1.0 E-07	FEBRUARY	4.32 E-02	0.28 ± 0.03	1.21 ± 1.0 E-07
MARCH	6.58 E-03	0.26 ± 0.03	SAMPLE DRY	MARCH	2.59 E-02	0.36 ± 0.03	7.71 ± 1.2 E-07
APRIL	9.84 E-03	0.17 ± 0.02	<1.0 E-07	APRIL	2.56 E-02	0.20 ± 0.03	<1.0 E-07
MAY	2.14 E-02	0.85 ± 0.06	<1.0 E-07	MAY	5.22 E-02	0.93 ± 0.07	<1.0 E-07
JUNE	2.74 E-02	0.45 ± 0.04	<1.0 E-07	JUNE	6.86 E-02	0.69 ± 0.05	<1.0 E-07
JULY	5.62 E-02	0.62 ± 0.04	<1.0 E-07	JULY	9.91 E-02	0.61 ± 0.04	<1.0 E-07
AUGUST	3.33 E-02	0.51 ± 0.04	<1.0 E-07	AUGUST	3.82 E-02	0.37 ± 0.03	<1.0 E-07
SEPTEMBER	2.51 E-02	0.40 ± 0.03	<1.0 E-07	SEPTEMBER	1.05 E-01	0.49 ± 0.04	<1.0 E-07
OCTOBER	7.92 E-02	0.48 ± 0.04	1.16 ± 1.1 E-07	OCTOBER	5.53 E-02	0.44 ± 0.04	<1.0 E-07
NOVEMBER	3.37 E-02	0.24 ± 0.03	2.96 ± 1.1 E-07	NOVEMBER	8.59 E-02	0.30 ± 0.03	2.50 ± 1.1 E-07
DECEMBER	4.15 E-02	0.34 ± 0.03	1.47 ± 1.1 E-07	DECEMBER	7.86 E-02	0.54 ± 0.04	1.57 ± 1.1 E-07

TABLE C - 2.3.2

PH OF PRECIPITATION FALLOUT COLLECTIONS

MONTH - 1986	DUTCH HILL (AFDHFOP)	FOX VALLEY ROAD (AFFXFOP)	ROUTE 240 (AF24FOP)	THOMAS CORNERS ROAD (AFTCFOP)
JANUARY	3.96	4.15	3.97	4.00
FEBRUARY	DRY	DRY	DRY	6.22
MARCH	3.62	4.65	3.75	6.09
APRIL	4.27	4.61	5.47	3.76
MAY	3.79	6.23	3.97	3.88
JUNE	4.04	4.14	4.01	4.01
JULY	6.16	3.81	5.84	3.53
AUGUST	4.49	4.03	5.07	3.94
SEPTEMBER	4.21	5.16	5.88	4.06
OCTOBER	4.22	4.33	4.05	4.76
NOVEMBER	4.16	4.52	4.12	4.15
DECEMBER				

TABLE C - 2.4

Radioactivity of Triennial Soil Samples for 1982 and 1985

ID	Date	Concentration (uCi/g) (dry weight from upper 5 cm)					
		K-40	Cs-137	Sr-90	Pu-239	Am-241	
SFSOLMW	Aug. 1982	1.05 ± 0.1 E-05	5.08 ± 0.9 E-07	5.74 ± 4.6 E-08	1.61 ± 0.4 E-08	3.98 ± 3.4 E-09	
SFSOLFV	Aug. 1982	9.93 ± 1.1 E-06	1.45 ± 0.1 E-06	6.40 ± 1.2 E-07	3.23 ± 0.6 E-08	1.36 ± 0.4 E-09	
SFSOLSP	Aug. 1982	1.34 ± 0.1 E-05	1.22 ± 0.1 E-06	5.11 ± 0.8 E-07	1.67 ± 0.5 E-08	6.35 ± 3.9 E-09	
SFSOLTC	Aug. 1982	1.73 ± 0.2 E-05	7.79 ± 1.1 E-07	5.27 ± 0.7 E-07	2.03 ± 0.5 E-08	1.10 ± 0.6 E-09	
SFSOL24	Aug. 1982	1.27 ± 0.2 E-05	1.02 ± 0.1 E-06	5.02 ± 0.7 E-07	1.43 ± 0.5 E-08	5.11 ± 2.9 E-09	
SFSOLLV	Aug. 1982	1.24 ± 0.1 E-05	4.35 ± 0.8 E-07	1.75 ± 0.4 E-07	6.10 ± 2.9 E-09	4.70 ± 3.8 E-09	
SFSOLDK	Aug. 1982	1.67 ± 0.2 E-05	8.03 ± 1.1 E-07	1.54 ± 0.3 E-07	1.41 ± 0.4 E-08	5.43 ± 4.0 E-09	
SFSOLSB	Aug. 1982	1.20 ± 0.1 E-05	<5.4 E-08	<4 E-08	1.49 ± 1.1 E-09	2.44 ± 1.6 E-09	
SFSOLMW	Dec. 1985	1.40 ± 0.1 E-05	1.78 ± 0.8 E-07	7.80 ± 3.0 E-08	2.81 ± 2.8 E-09	5.55 ± 3.8 E-09	
SFSOLFV	Dec. 1985	1.15 ± 0.2 E-05	9.84 ± 1.3 E-07	3.39 ± 0.5 E-07	2.32 ± 0.6 E-08	7.75 ± 2.9 E-09	
SFSOLSP	Dec. 1985	1.42 ± 0.2 E-05	4.49 ± 0.8 E-07	1.47 ± 0.3 E-07	4.75 ± 1.8 E-09	2.83 ± 2.3 E-09	
SFSOLTC	Dec. 1985	1.92 ± 0.2 E-05	7.02 ± 1.2 E-07	3.57 ± 0.6 E-07	1.39 ± 0.4 E-08	5.28 ± 2.3 E-09	
SFSOL24	Dec. 1985	1.34 ± 0.2 E-05	9.07 ± 1.2 E-07	3.41 ± 0.5 E-07	1.76 ± 0.4 E-08	1.11 ± 0.5 E-08	
SFSOLLV	Dec. 1985	1.47 ± 0.1 E-05	3.05 ± 0.7 E-07	6.88 ± 3.6 E-08	1.22 ± 0.4 E-08	3.67 ± 2.2 E-09	
SFSOLDK	Dec. 1985	1.73 ± 0.2 E-05	6.46 ± 1.2 E-07	2.77 ± 0.4 E-07	1.49 ± 0.4 E-08	9.46 ± 5.3 E-09	
SFSOLRS	Dec. 1985	1.54 ± 0.2 E-05	1.87 ± 0.2 E-06	4.59 ± 0.6 E-07	1.93 ± 0.5 E-08	1.52 ± 0.4 E-08	
SFSOLGV	Dec. 1985	1.16 ± 0.1 E-05	2.13 ± 0.1 E-06	3.66 ± 0.5 E-07	4.52 ± 0.7 E-08	1.32 ± 0.4 E-08	

FIGURE C-2.1
 1986 SAMPLING DATA FOR STATION ANSTACK
 CURIES RELEASED PER MONTH

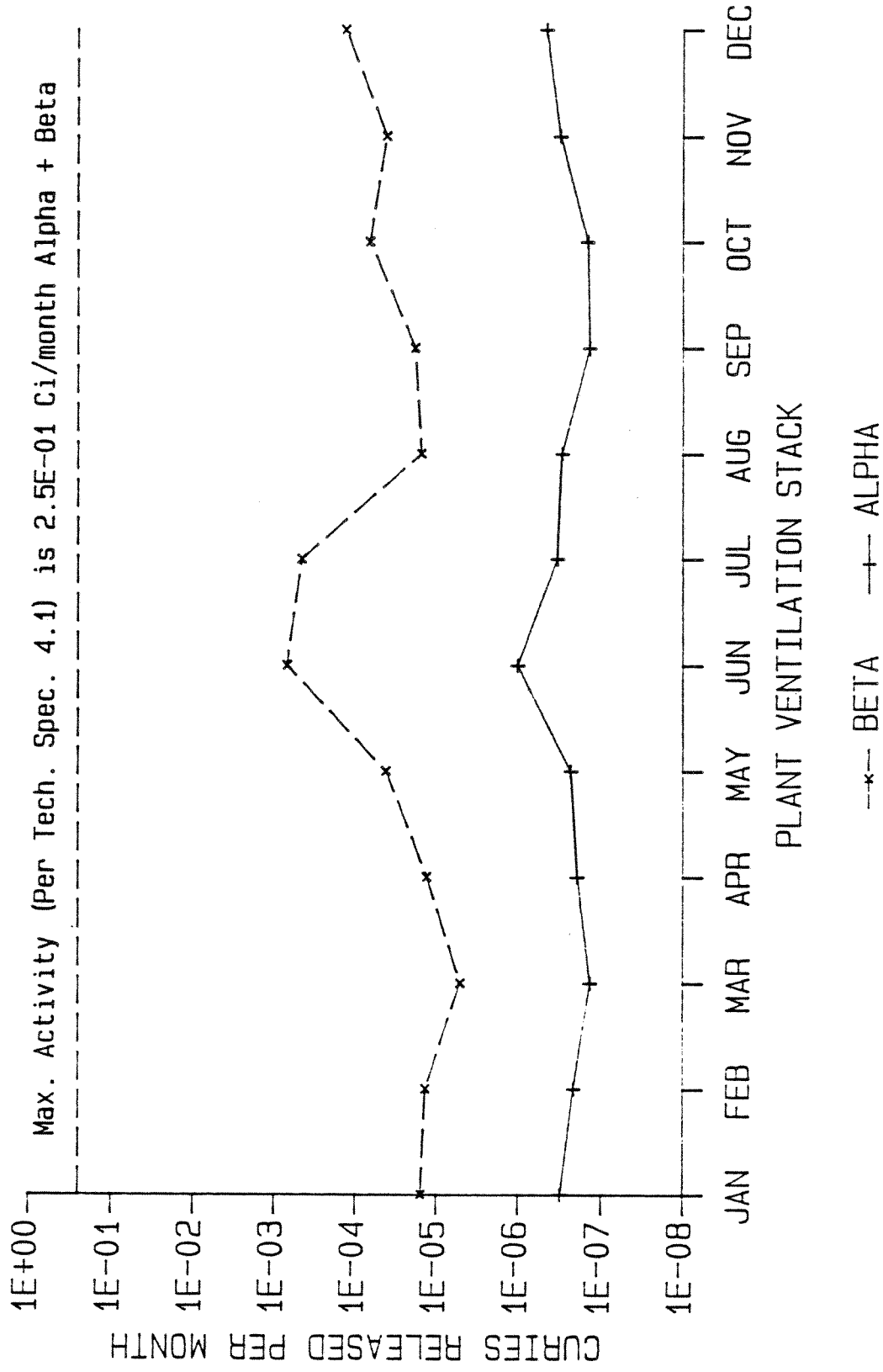
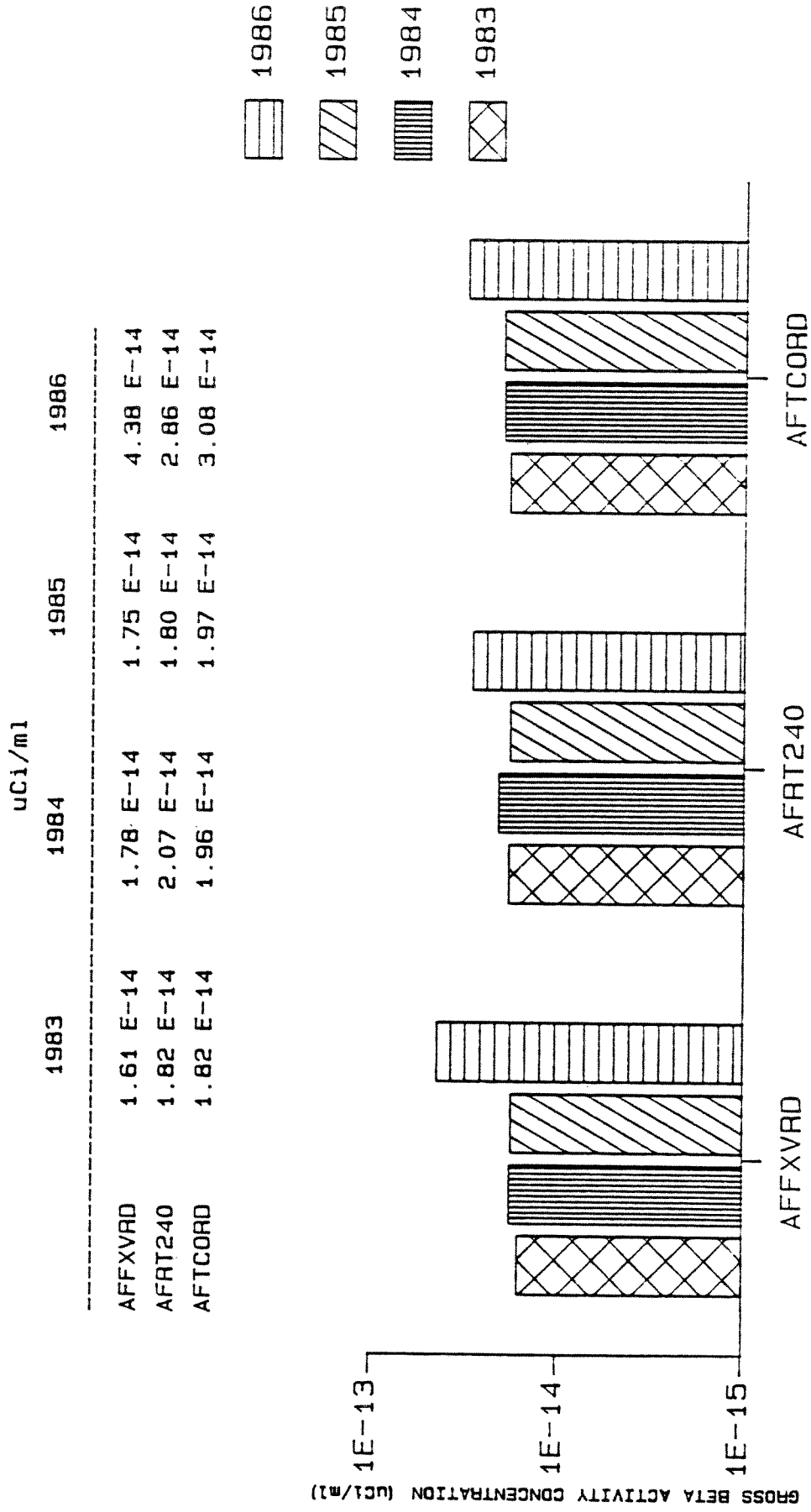


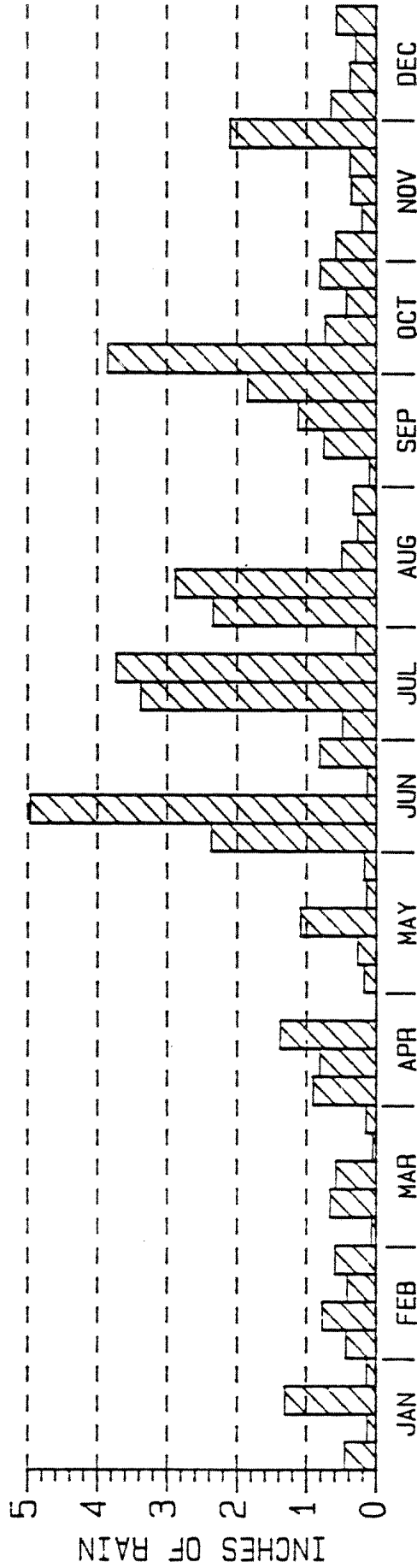
FIGURE C-2.2
 TRENDS OF GROSS BETA ACTIVITY IN PERIMETER AIR SAMPLERS
 (AFFXVRD, AFRT240, AFTCORD) 1983 1986



PARTICULATE AIR SAMPLE ANNUAL AVERAGES

Figure C-2.3
 1986 COLLECTION DATA FOR SITE RAINFALL
 CUMULATIVE TOTAL = 48.48 INCHES

END DATE	IN.	DATE	IN.	DATE	IN.	DATE	IN.	DATE	IN.
JAN 07	0.46	14	0.13	21	1.31	28	0.14		
FEB 04	0.44	11	0.78	18	0.42	25	0.60		
MAR 04	0.07	11	0.67	18	0.58	25	0.05	01	0.16
APR 08	0.91	15	0.81	22	1.38	29	0.00		
MAY 06	0.19	13	0.28	20	1.09	27	0.14	03	0.18
JUN 10	2.37	17	4.97	24	0.13	01	0.82		
JUL 08	0.49	15	3.38	22	3.73	29	0.30		
AUG 05	2.34	12	2.88	19	0.50	26	0.27	02	0.34
SEP 09	0.10	16	0.76	23	1.12	30	1.85		
OCT 07	3.85	14	0.73	21	0.43	28	0.81		
NOV 04	0.58	11	0.21	18	0.33	25	0.39	02	2.10
DEC 09	0.65	16	0.38	23	0.30	31	0.58	(8 days)	



REPORTING BEGINS ON 01/01/86, ENDS ON 12/31/86
 MEASUREMENTS TAKEN TUESDAY THRU TUESDAY

APPENDIX C-3

SUMMARY OF BIOLOGICAL SAMPLE DATA

TABLE C-3.1

RADIOACTIVITY CONCENTRATIONS IN MILK - 1986
($\mu\text{Ci}/\text{ml}$)

LOCATION	H-3	Sr-90	I-129	Cs-134	Cs-137
NNW Farm (BFMREED) 1st Qtr 1986	< 2.0 E-07	1.74 \pm 0.2 E-09	< 7.0 E-10	< 8.0 E-09	< 1.0 E-08
NNW Farm (BFMREED) 2nd Qtr 1986	< 2.0 E-07	2.58 \pm 0.4 E-09	< 1.1 E-09	< 9.5 E-09	< 1.2 E-08
WNW Farm (BFMCOBO) 2nd Qtr 1986	< 2.0 E-07	2.01 \pm 0.3 E-09	< 1.1 E-09	< 1.4 E-08	< 1.4 E-08
NNW Farm (BFMREED) 3rd Qtr 1986	< 3.0 E-07	1.99 \pm 0.3 E-09	< 6.0 E-10	< 1.2 E-08	< 1.0 E-08
ENE Farm (BFMZIMM) August, 1986	< 4.0 E-07	4.36 \pm 0.5 E-09	< 5.0 E-10	< 9.1 E-09	< 9.9 E-09
WNW Farm (BFMCOBO) 3rd Qtr 1986	< 4.0 E-07	3.33 \pm 0.5 E-09	< 6.0 E-10	< 1.3 E-08	< 1.5 E-08
NNW Farm (BFMREED) 4th Qtr 1986	< 4.0 E-07	2.46 \pm 0.3 E-09	< 5.0 E-10	< 1.1 E-08	< 9.8 E-09
SE Farm (BFMWIDR) December, 1986	< 4.0 E-07	3.20 \pm 0.5 E-09	< 6.0 E-10	< 1.1 E-08	< 1.3 E-08
SSW Farm (BFMHAUR) December, 1986	< 4.0 E-07	6.90 \pm 0.8 E-09	< 6.0 E-10	< 1.1 E-08	< 1.4 E-08
WNW Farm (BFMCOBO) 4th Qtr 1986	< 4.0 E-07	5.46 \pm 0.7 E-09	< 4.0 E-10	< 9.3 E-09	< 9.8 E-09
Control (BFMCTRL-S) 4th Qtr 1986	< 4.0 E-07	2.17 \pm 0.4 E-09	< 5.0 E-10	< 1.0 E-09	< 1.3 E-08
Control (BFMCTRL-M) 4th Qtr 1986	< 4.0 E-07	3.22 \pm 0.6 E-09	< 5.0 E-10	< 1.7 E-08	< 1.5 E-08

TABLE C-3.2
 RADIOACTIVITY CONCENTRATIONS IN MEAT - 1986
 ($\mu\text{Ci/g}$)

LOCATION	Sr-89	Sr-90	Cs-134	Cs-137
Deer Flesh- Near Site (BFDNEAR) 12/86		4.71 \pm 0.8 E-09	< 2.4 E-08	3.25 \pm 0.3 E-07
Deer Skeleton- Near Site (BFDNEAR) 12/86	< 6.0 E-06	4.48 \pm 0.5 E-06		
Deer Flesh- Background (BFDCTRL) 12/86		3.42 \pm 0.5 E-09	1.61 \pm 1.1 E-08	8.46 \pm 1.8 E-08
Beef Flesh- Near Site (BFBNEAR) 6/86			2.47 \pm 1.6 E-08	7.08 \pm 1.4 E-08
Beef Flesh- Background (BFBCTRL) 6/86			0.91 \pm 1.3 E-08	3.69 \pm 1.6 E-08
Beef Flesh- Near Site (BFBNEAR) 11/86			< 1.4 E-08	< 1.4 E-08
Beef Flesh- Background (BFBCTRL) 12/86			< 1.2 E-08	1.96 \pm 1.1 E-08

RADIOACTIVITY CONCENTRATIONS IN FOOD CROPS - 1986
($\mu\text{Ci/g}$) DRY

LOCATION	IRIDIUM ($\mu\text{Ci/ml}$)	Sr-90	K-40	Cs-60	Cs-137
Beans- Near Site (BFVNEAR) 8/86	< 4.0 E-07	5.67 \pm 0.7 E-07	1.06 \pm 0.2 E-05	< 1.7 E-07	< 1.6 E-07
Beans- Background (BFVCTRL) 8/86	6.4 \pm 2.4 E-07	2.27 \pm 0.3 E-07	3.35 \pm 0.3 E-05	< 1.9 E-07	< 1.3 E-07
Corn- Near Site (BFVNEAR) 8/86	< 4.0 E-07	4.67 \pm 0.7 E-08	1.22 \pm 0.3 E-05	< 2.0 E-07	< 1.6 E-07
Corn- Background (BFVCTRL) 8/86	5.4 \pm 2.3 E-07	2.22 \pm 1.7 E-09	1.01 \pm 0.1 E-05	< 6.4 E-08	3.22 \pm 3.0 E-08
Potatoes- Near Site (BFVNEAR) 8/86	< 3.0 E-07	1.52 \pm 0.3 E-08	1.34 \pm 0.1 E-05	< 3.0 E-08	2.71 \pm 1.8 E-08
Potatoes- Background (BFVCTRL) 8/86	< 3.0 E-07	7.33 \pm 1.6 E-09	1.68 \pm 0.1 E-05	< 4.4 E-08	< 3.4 E-08

TABLE-C-3.4

RADIOACTIVITY CONCENTRATIONS IN FISH FROM CATTARAUGUS CREEK - 1986
($\mu\text{Ci/g}$ - DRY)

CATTARAUGUS CREEK (BFFCATC) - SECOND QUARTER 1986		CATTARAUGUS CREEK (BFFCATC) - THIRD QUARTER 1986	
FLESH		FLESH	
Sr-90	Cs-134 Cs-137	Sr-90	Cs-134 Cs-137
8.20 E-08	<2.4 E-07 <2.5 E-07	6.79 E-08	<1.8 E-07 <1.6 E-07
MEDIAN			
AVERAGE GEOMETRIC DEVIATION			
1.52	1.49 1.51	1.49	1.61 1.79
MAXIMUM			
1.79 ± 0.2 E-07	<4.9 E-07 <3.8 E-07	9.78 ± 1.9 E-08	<2.8 E-07 <3.0 E-07
MINIMUM			
4.28 ± 0.8 E-08	<1.1 E-07 <1.2 E-07	2.87 ± 1.1 E-08	<7.6 E-08 <7.1 E-08
CATTARAUGUS CREEK (BFFCTRL) - BACKGROUND FISH			
SECOND QUARTER 1986		THIRD QUARTER 1986	
FLESH			
Sr-90	Cs-134 Cs-137	Sr-90	Cs-134 Cs-137
3.75 E-08	<1.4 E-07 <1.6 E-07	3.62 E-08	<9.5 E-08 <9.9 E-08
MEDIAN			
AVERAGE GEOMETRIC DEVIATION			
1.79	1.72 1.86	1.56	1.35 1.45
MAXIMUM			
8.20 ± 1.4 E-08	<4.7 E-07 <3.9 E-07	5.05 ± 1.0 E-08	<1.4 E-07 <2.42 \pm 1.0 E-07
MINIMUM			
9.93 ± 1.8 E-09	<4.3 E-08 <4.8 E-08	<1.4 E-08	<4.9 E-08 <5.3 E-08
CATTARAUGUS CREEK (BFFCATD) - BELOW SPRINGVILLE DAM			
SECOND QUARTER 1986		THIRD QUARTER 1986	
FLESH			
Sr-90	Cs-134 Cs-137	Sr-90	Cs-134 Cs-137
5.85 E-08	<2.3 E-07 <2.7 E-07	9.20 E-09	<3.3 E-08 8.0 E-08
MEDIAN			
AVERAGE GEOMETRIC DEVIATION			
1.31	1.31 1.26	1.70	1.78 1.68
MAXIMUM			
8.69 ± 1.5 E-08	<4.3 E-07 <4.0 E-07	4.36 ± 0.7 E-08	<1.0 E-07 <1.53 \pm 0.3 E-07
MINIMUM			
4.13 ± 2.8 E-08	<1.5 E-07 <1.8 E-07	<7.0 E-10	<1.5 E-08 5.41 \pm 2.7 E-08

FIGURE U-3.1
 COMPARISON OF RADIOACTIVITY IN FISH
 SAMPLES FROM AROUND WVDP-1986

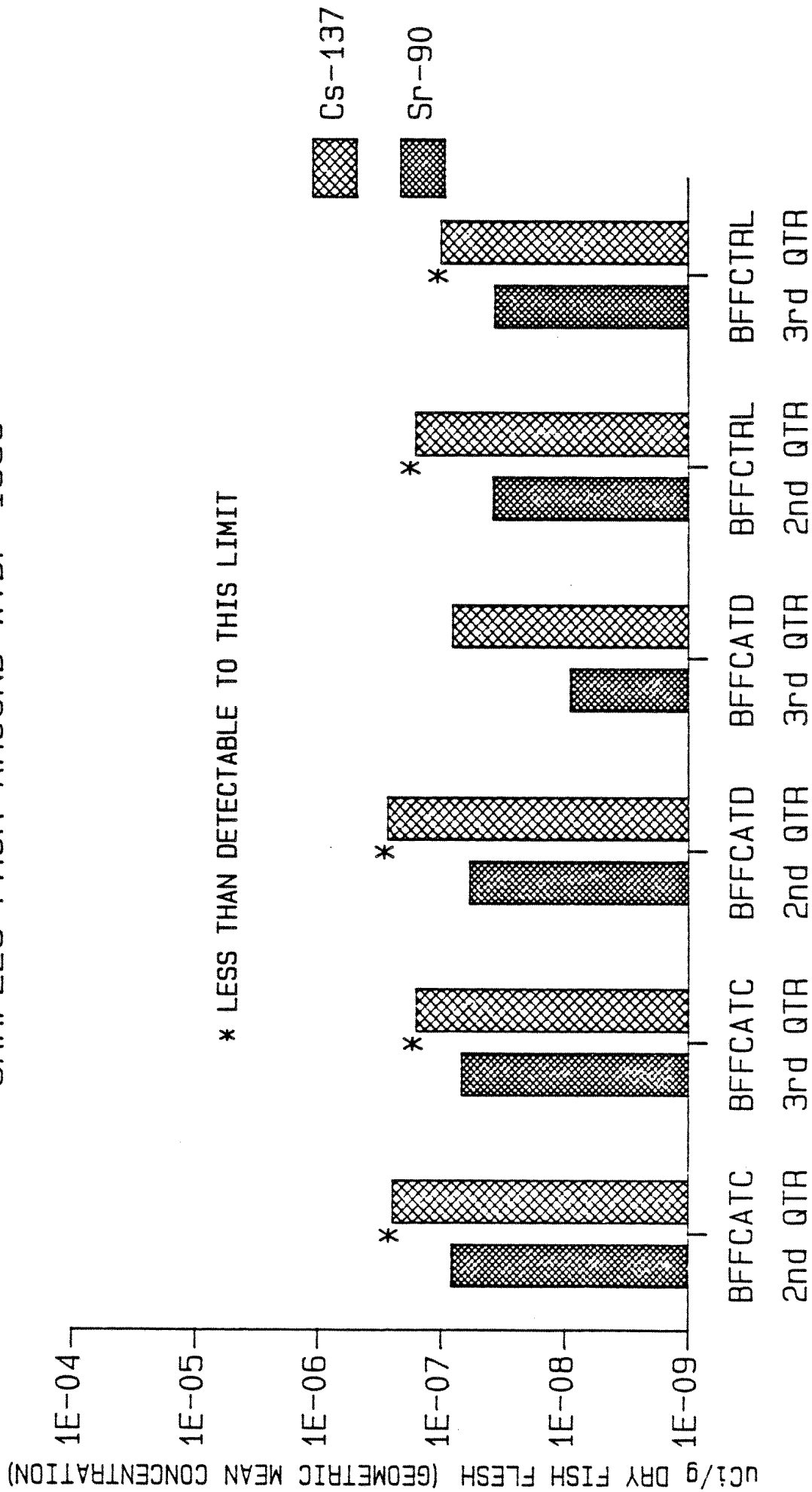


FIGURE C-3.2
 TRENDS OF Sr-90 CONCENTRATIONS IN FISH FROM
 CATTARAUGUS CREEK (BFFCATC) 1982-1986

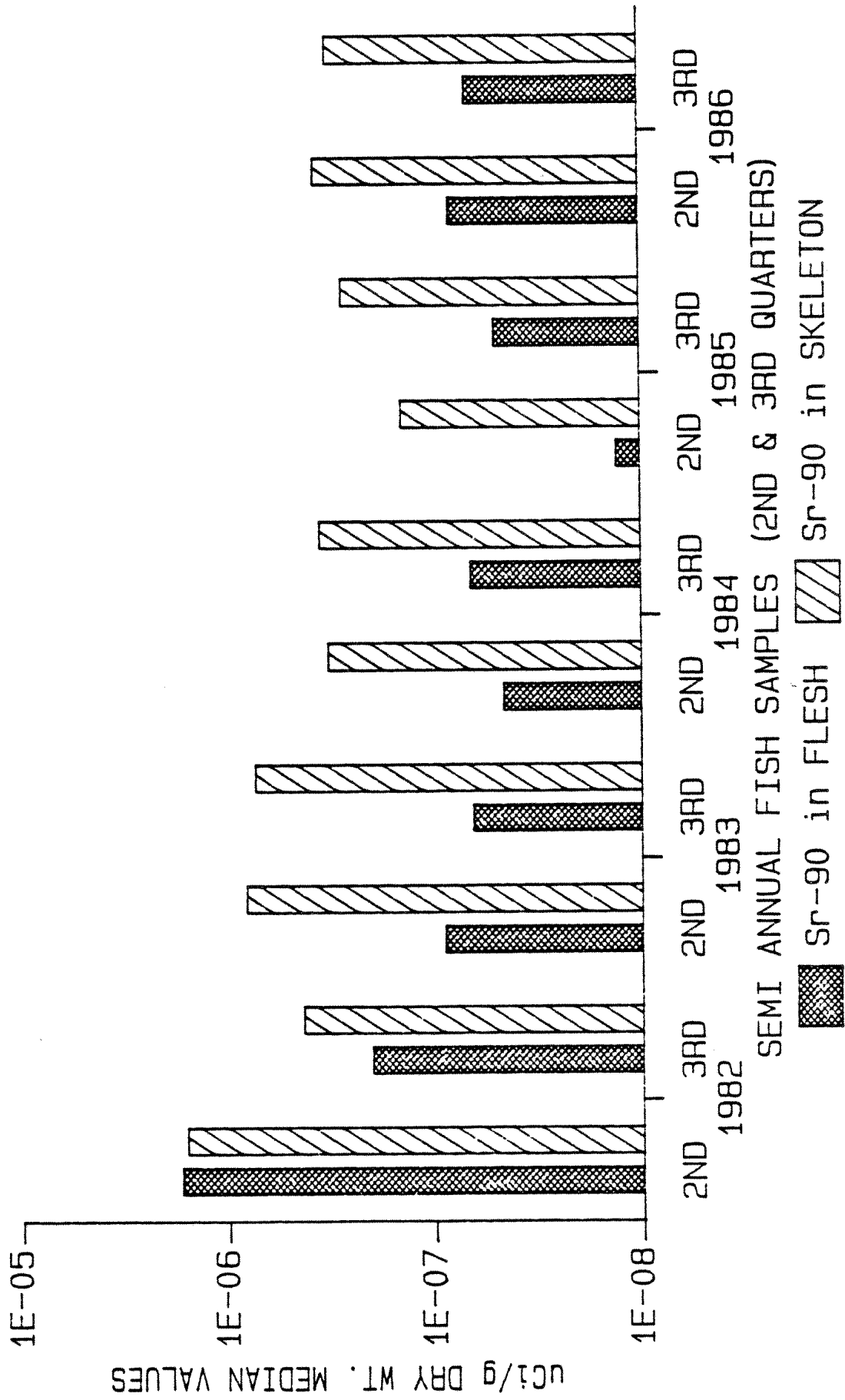


FIGURE C-3.3
TRENDS OF RADIONUCLIDES IN VENISON FROM NEAR WVDP SITE
(BFDNEAR) 1982-1986

	Sr-90 in FLESH	Cs-137 in FLESH
1982	4.00+/-3.0 E-09	<5.7 E-09
1983	3.60+/-0.7 E-09	2.90+/-2.1 E-08
1984	3.00+/-0.9 E-09	4.80+/-0.4 E-07
1985	2.60+/-0.4 E-09	1.80+/-0.3 E-07
1986	4.71+/-0.8 E-09	3.25+/-0.3 E-07

