

# *Appendix C - 3*

## *Summary of Biological Data*



*Milk and Meat Samples are Collected from Local Bovine Herds*

**Table C - 3.1**

**1993 Radioactivity Concentrations in Milk ( $\mu\text{Ci/mL}$ )**

Location	H-3	Sr-90	I-129	Cs-134	Cs-137	K-40
<b>BFMCOBO</b>						
(WNW FARM)						
<i>1st Qtr</i>	5.40±7.40E-08	1.80±0.20E-09	3.70±2.90E-10	-0.10±2.52E-09	2.70±2.40E-09	9.69±0.97E-07
<i>2nd Qtr</i>	0.51±1.16E-07	1.70±0.20E-09	-4.00±2.20E-10	-1.50±2.50E-09	1.50±2.60E-09	6.20±0.60E-07
<i>3rd Qtr</i>	3.20±8.50E-08	2.30±0.20E-09	0.78±3.21E-10	2.10±2.40E-09	3.20±2.40E-09	1.30±0.10E-06
<i>4th Qtr</i>	4.70±8.70E-08	2.80±0.40E-09	1.30±2.90E-10	0.22±2.47E-09	1.50±2.40E-09	1.30±0.10E-06
<b>BFMCTLN</b>						
(CONTROL)						
<i>1st Qtr</i>	1.00±0.80E-07	7.10±1.40E-10	3.50±3.10E-10	0.78±2.07E-09	1.20±2.00E-09	7.96±0.80E-07
<i>2nd Qtr</i>	0.27±1.15E-07	1.30±0.20E-09	-1.20±3.00E-10	0.51±2.35E-09	0.39±2.28E-09	2.00±0.20E-06
<i>3rd Qtr</i>	8.30±8.80E-08	2.60±0.20E-09	1.40±2.90E-10	1.70±2.80E-09	2.80±2.60E-09	1.40±0.10E-06
<i>4th Qtr</i>	1.20±0.90E-07	3.10±0.40E-09	0.04±2.53E-10	1.90±2.80E-09	5.00±2.90E-09	1.60±0.20E-06
<b>BFMCTLS</b>						
(CONTROL)						
<i>1st Qtr</i>	4.50±7.40E-08	1.20±0.20E-09	3.60±3.00E-10	0.99±2.24E-09	0.79±2.16E-09	1.61±0.16E-06
<i>2nd Qtr</i>	-0.61±1.14E-08	1.40±0.20E-09	-3.50±2.30E-10	1.10±1.90E-09	0.91±1.81E-09	1.30±0.10E-06
<i>3rd Qtr</i>	3.80±8.50E-08	1.40±0.30E-09	1.10±3.20E-10	0.15±2.42E-09	1.60±2.40E-09	1.40±0.10E-06
<i>4th Qtr</i>	3.40±8.20E-08	6.20±2.00E-10	-4.80±3.40E-10	-0.52±2.21E-09	1.80±2.80E-09	5.50±0.60E-07
<b>BFMREED</b>						
(NNW FARM)						
<i>1st Qtr</i>	2.20±7.50E-08	9.10±1.90E-10	5.60±3.50E-10	-2.20±2.90E-09	1.50±2.70E-09	1.01±0.10E-06
<i>2nd Qtr</i>	0.35±1.15E-07	1.50±0.20E-09	-0.03±2.96E-10	-1.80±2.50E-09	1.90±2.50E-09	1.90±0.20E-06
<i>3rd Qtr</i>	5.50±8.85E-08	2.05±0.30E-09	1.28±3.43E-10	0.14±2.75E-09	2.75±2.72E-09	1.25±0.10E-06
<i>4th Qtr</i>	1.40±0.70E-07	2.10±0.50E-09	-3.90±2.90E-10	-0.44±1.97E-09	-0.34±2.32E-09	1.40±0.10E-06
<b>BFMHUR</b>						
(SE FARM)						
<i>Annual</i>	1.60±0.80E-07	2.50±0.30E-09	0.72±4.64E-10	0.64±2.35E-09	2.10±2.70E-09	1.40±0.10E-06
<b>BFMWDR</b>						
(SSW FARM)						
<i>Annual</i>	7.90±8.40E-08	2.00±0.30E-09	1.20±4.20E-10	0.59±2.54E-09	3.50±2.60E-09	1.40±0.10E-06

**Table C - 3.2****1993 Radioactivity Concentrations in Meat ( $\mu\text{Ci/g Dry}$ )**

<b>Location</b>	<b>% Moisture</b>	<b>H-3</b>	<b>Sr-90</b>	<b>Cs-134</b>	<b>Cs-137</b>	<b>K-40</b>
<b>DEER FLESH BACKGROUND</b> (BFDCTRL 1)	72.5	0.31 $\pm$ 1.16E-07	6.60 $\pm$ 8.10E-09	-4.20 $\pm$ 7.50E-09	3.80 $\pm$ 0.40E-07	1.00 $\pm$ 0.10E-05
<b>DEER FLESH BACKGROUND</b> (BFDCTRL 2)	76.1	-1.60 $\pm$ 1.50E-07	6.80 $\pm$ 9.80E-09	0.66 $\pm$ 1.12E-08	2.50 $\pm$ 0.20E-07	1.30 $\pm$ 0.10E-05
<b>DEER FLESH BACKGROUND</b> (BFDCTRL 3)	75.3	0.55 $\pm$ 1.61E-07	1.30 $\pm$ 0.90E-08	-2.20 $\pm$ 9.70E-09	1.60 $\pm$ 0.20E-07	1.70 $\pm$ 0.20E-05
<b>DEER FLESH NEAR-SITE</b> (BFDNEAR 1)	73.8	1.40 $\pm$ 1.50E-07	1.20 $\pm$ 0.60E-08	-0.58 $\pm$ 1.12E-08	6.10 $\pm$ 1.40E-08	1.40 $\pm$ 0.10E-05
<b>DEER FLESH NEAR-SITE</b> (BFDNEAR 2)	72.9	0.09 $\pm$ 1.66E-07	1.20 $\pm$ 0.60E-08	0.69 $\pm$ 1.28E-08	1.70 $\pm$ 0.20E-07	1.10 $\pm$ 0.10E-05
<b>DEER FLESH NEAR-SITE</b> (BFDNEAR 3)	75.8	0.54 $\pm$ 1.30E-07	1.00 $\pm$ 0.50E-08	0.92 $\pm$ 1.27E-08	1.20 $\pm$ 0.20E-07	1.30 $\pm$ 0.10E-05
<b>BEEF FLESH BACKGROUND</b> (BFBCTRL 6/93)	71.3	-8.10 $\pm$ 9.00E-08	0.00 $\pm$ 4.50E-09	-2.90 $\pm$ 7.40E-09	5.10 $\pm$ 7.00E-09	1.00 $\pm$ 0.10E-05
<b>BEEF FLESH BACKGROUND</b> (BFBCTRL 12/93)	72.1	4.50 $\pm$ 6.10E-08	1.10 $\pm$ 0.60E-08	0.11 $\pm$ 1.05E-08	0.70 $\pm$ 1.05E-08	1.10 $\pm$ 0.10E-05
<b>BEEF FLESH NEAR-SITE</b> (BFBNEAR 6/93)	75.2	2.50 $\pm$ 9.50E-08	0.22 $\pm$ 2.41E-09	0.79 $\pm$ 8.21E-09	1.70 $\pm$ 0.80E-08	1.00 $\pm$ 0.10E-05
<b>BEEF FLESH NEAR-SITE</b> (BFBNEAR 12/93)	76.5	1.00 $\pm$ 5.20E-08	1.60 $\pm$ 0.50E-08	0.55 $\pm$ 9.53E-09	1.20 $\pm$ 1.00E-08	1.30 $\pm$ 0.10E-05

**Table C - 3.3**

**1993 Radioactivity Concentrations in Food Crops ( $\mu\text{Ci/g Dry}$ )**

Location	% Moisture	H-3	Sr-90	K-40	Co-60	Cs-137
<b>BEANS BACKGROUND (BFVCTRL)</b>	90.3	1.30±1.00E-06	3.10±0.80E-07	3.20±0.30E-06	0.17±5.95E-09	4.00±6.30E-09
<b>NEAR-SITE (BFVNEAR)</b>	82.8	0.06±1.15E-06	2.40±0.60E-07	4.10±0.40E-06	0.89±5.05E-09	-1.70±5.30E-09
<b>CORN BACKGROUND (BFVCTRL)</b>	87.9	3.50±2.60E-07	0.08±1.18E-08	2.10±0.20E-05	-0.46±1.86E-08	0.53±1.85E-08
<b>NEAR-SITE (BFVNEAR)</b>	68.6	1.12±1.04E-07	0.01±1.02E-08	7.25±0.75E-06	0.75±8.95E-09	5.25±9.55E-09
<b>APPLES BACKGROUND (BFVCTRL)</b>	89.4	7.90±9.20E-08	7.80±9.00E-09	5.90±0.60E-06	1.30±2.00E-08	0.80±2.13E-08
<b>NEAR-SITE (BFVNEAR)</b>	82.8	0.83±1.01E-07	-2.80±9.50E-09	1.20±0.10E-05	0.42±2.13E-08	2.00±2.30E-08
<b>HAY BACKGROUND (BFHCTLN)</b>	7.06	NA	8.70±1.40E-08	2.30±0.20E-05	0.00±2.40E-08	3.00±2.60E-08
<b>NEAR-SITE (BFHNEAR)</b>	9.22	NA	1.90±0.20E-07	3.10±0.30E-05	1.20±2.30E-08	2.60±2.40E-08

NA - Not available.

**Table C - 3.4**

**1993 Radioactivity Concentrations in Fish Flesh from Cattaraugus Creek**

**Cattaraugus Creek (BFFCATC) above Springville Dam**

	1st Half ( $\mu\text{Ci/g dry}$ )			2nd Half ( $\mu\text{Ci/g dry}$ )		
	Sr-90	Cs-134	Cs-137	Sr-90	Cs-134	Cs-137
Median	7.8E-08	< 5.1E-08	< 4.8E-08	4.5E-08	< 1.1E-07	< 1.6E-07
Maximum	5.6E-07	< 1.0E-07	5.7E-08	1.3E-07	< 1.8E-07	1.8E-07
Minimum	1.7E-08	< 3.6E-08	< 3.5E-08	< 1.7E-08	< 6.2E-08	< 6.0E-08
Moisture (Average %)	78.7			76.4		

**Cattaraugus Creek (BFFCTRL) Background**

	1st Half ( $\mu\text{Ci/g dry}$ )			2nd Half ( $\mu\text{Ci/g dry}$ )		
	Sr-90	Cs-134	Cs-137	Sr-90	Cs-134	Cs-137
Median	3.1E-08	< 6.0E-08	< 5.7E-08	1.7E-08	< 9.3E-08	< 8.3E-08
Maximum	4.6E-08	< 1.1E-07	5.3E-08	3.9E-07	< 1.5E-07	< 1.4E-07
Minimum	< 3.4E-08	< 4.9E-08	< 4.3E-08	< 1.0E-08	< 5.3E-08	< 4.8E-08
Moisture (Average %)	78.6			79.2		

**Cattaraugus Creek (BFFCATD) below the Springville Dam (annual)**  
( $\mu\text{Ci/g dry}$ )

	Sr-90	Cs-134	Cs-137
Median	4.3E-08	< 4.0E-08	< 4.9E-08
Maximum	5.0E-07	4.0E-07	1.0E-07
Minimum	< 6.7E-09	< 2.5E-08	< 2.5E-08
Moisture (Average %)	72.6		