Appendix A

Fossil and Biomass Fuels

Table A-1 Calculation of 1990 Utah Residential Carbon Dioxide Emmissions by County (Tons CO2)

County	Asphalt & Road Oil	Aviation Gasoline	Distillate Fuel Oil	Jet Fuel Kerosene	Kerosene	LPG	Lubricants	Motor Gasoline	Residual Fuel Oil	Bituminous Coal	Coke	Natural Gas	Wood	Other
Beaver	0	0	177	0	6	65	0	0	0	627	0	7,155	20	0
Box Elder	0	0	1,345	0	47	493	0	0	0	4,767	0	54,404	149	0
Cache	0	0	2,598	0	91	951	0	0	0	9,207	0	105,082	288	0
Carbon	0	0	745	0	26	273	0	0	0	2,638	0	30,109	82	0
Daggett	0	0	26	0	1	9	0	0	0	91	0	1,043	3	0
Davis	0	0	6,929	0	243	2,537	0	0	0	24,553	0	280,220	767	0
Duchesne	0	0	464	0	16	170	0	0	0	1,646	0	18,781	51	0
Emery	0	0	380	0	13	139	0	0	0	1,345	0	15,352	42	0
Garfield	0	0	146	0	5	53	0	0	0	516	0	5,888	16	0
Grand	0	0	243	0	9	89	0	0	0	862	0	9,837	27	0
Iron	0	0	770	0	27	282	0	0	0	2,730	0	31,152	85	0
Juab	0	0	214	0	8	78	0	0	0	757	0	8,645	24	0
Kane	0	0	190	0	7	70	0	0	0	673	0	7,676	21	0
Millard	0	0	416	0	15	153	0	0	0	1,476	0	16,843	46	0
Morgan	0	0	205	0	7	75	0	0	0	725	0	8,272	23	0
Piute	0	0	46	0	2	17	0	0	0	163	0	1,863	5	0
Rich	0	0	65	0	2	24	0	0	0	229	0	2,608	7	0
Salt Lake	0	0	26,832	0	942	9,825	0	0	0	95,077	0	1,085,106	2,970	0
San Juan	0	0	464	0	16	170	0	0	0	1,646	0	18,781	51	0
Sanpete	0	0	601	0	21	220	0	0	0	2,129	0	24,296	66	0
Sevier	0	0	568	0	20	208	0	0	0	2,011	0	22,954	63	0
Summit	0	0	579	0	20	212	0	0	0	2,050	0	23,401	64	0
Tooele	0	0	984	0	35	360	0	0	0	3,487	0	39,797	109	0
Uintah	0	0	818	0	29	300	0	0	0	2,899	0	33,090	91	0
Utah	0	0	9,804	0	344	3,590	0	0	0	34,740	0	396,481	1,085	0
Wasatch	0	0	372	0	13	136	0	0	0	1,319	0	15,054	41	0
Washington	0	0	1,810	0	64	663	0	0	0	6,412	0	73,185	200	0
Wayne	0	0	79	0	3	29	0	0	0	281	0	3,205	9	0
Weber	0	0	5,860	0	206	2,146	0	0	0	20,765	0	236,994	649	0
Total Statewide	0	0	63,730	0	2,238	23,335	0	0	0	225,821	0	2,577,276	7,054	0

Table A-2 Calculation of 1990 Utah Commercial Carbon Dioxide Emissions by County (Tons CO2)

County	Asphalt & Road Oil	Aviation Gasoline	Distillate Fuel Oil	Jet Fuel Kerosene	Kerosene	LPG	Lubricants	Motor Gasoline	Residual Fuel Oil	Bituminous Coal	Coke	Natural Gas	Wood	Other
Beaver	0	0	329	0	4	8	0	76	0	830	0	1,885	0	0
Box Elder	0	0	2,052	0	27	51	0	475	0	5,177	0	11,749	0	0
Cache	0	0	5,749	0	77	142	0	1,331	0	14,505	0	32,924	0	0
Carbon	0	0	1,676	0	22	41	0	388	0	4,229	0	9,599	0	0
Daggett	0	0	89	0	1	2	0	21	0	224	0	509	0	0
Davis	0	0	14,802	0	198	365	0	3,427	0	37,345	0	84,765	0	0
Duchesne	0	0	848	0	11	21	0	196	0	2,139	0	4,856	0	0
Emery	0	0	531	0	7	13	0	123	0	1,341	0	3,043	0	0
Garfield	0	0	376	0	5	9	0	87	0	948	0	2,151	0	0
Grand	0	0	661	0	9	16	0	153	0	1,667	0	3,785	0	0
Iron	0	0	1,913	0	26	47	0	443	0	4,827	0	10,955	0	0
Juab	0	0	404	0	5	10	0	94	0	1,019	0	2,313	0	0
Kane	0	0	460	0	6	11	0	107	0	1,161	0	2,636	0	0
Millard	0	0	718	0	10	18	0	166	0	1,811	0	4,111	0	0
Morgan	0	0	249	0	3	6	0	58	0	627	0	1,424	0	0
Piute	0	0	50	0	1	1	0	12	0	127	0	289	0	0
Rich	0	0	114	0	2	3	0	26	0	288	0	655	0	0
Salt Lake	0	0	83,684	0	1,118	2,063	0	19,372	0	211,127	0	479,211	0	0
San Juan	0	0	786	0	10	19	0	182	0	1,982	0	4,498	0	0
Sanpete	0	0	981	0	13	24	0	227	0	2,475	0	5,617	0	0
Sevier	0	0	1,182	0	16	29	0	274	0	2,981	0	6,767	0	0
Summit	0	0	2,196	0	29	54	0	508	0	5,541	0	12,576	0	0
Tooele	0	0	2,600	0	35	64	0	602	0	6,561	0	14,891	0	0
Uintah	0	0	1,487	0	20	37	0	344	0	3,751	0	8,514	0	0
Utah	0	0	23,419	0	313	577	0	5,421	0	59,085	0	134,109	0	0
Wasatch	0	0	683	0	9	17	0	158	0	1,724	0	3,913	0	0
Washington	0	0	3,758	0	50	93	0	870	0	9,482	0	21,522	0	0
Wayne	0	0	136	0	2	3	0	32	0	343	0	779	0	0
Weber	0	0	15,531	0	208	383	0	3,595	0	39,184	0	88,940	0	0
Total Statewide	0	0	167,466	0	2,238	4,128	0	38,766	0	422,503	0	958,986	0	0

Table A-3 Calculation of 1990 Industrial Carbon Dioxide Emmissions by County (Tons CO2)

County	Asphalt Road Oil	Aviation Gasoline	Distillate Fuel Oil	Jet Fuel Kerosene	Kerosene	LPG	Lubricants	Motor Gasoline	Residual Fuel Oil	Bituminous Coal	Coke	Natural Gas	Wood	Other
Beaver	0	0	1,875	0	5	77	71	215	0	12,411	0	8,836	0	3,835
Box Elder	0	0	42,872	0	110	1,764	1,625	4,926	0	283,749	0	202,003	0	87,675
Cache	0	0	48,515	0	124	1,996	1,838	5,574	0	321,095	0	228,590	0	99,215
Carbon	0	0	8,634	0	22	355	327	992	0	57,143	0	40,680	0	17,656
Daggett	0	0	199	0	1	8	8	23	0	1,320	0	940	0	408
Davis	0	0	48,027	0	123	1,976	1,820	5,518	0	317,866	0	226,291	0	98,217
Duchesne	0	0	6,856	0	18	282	260	788	0	45,377	0	32,304	0	14,021
Emery	0	0	7,560	0	19	311	286	869	0	50,039	0	35,623	0	15,461
Garfield	0	0	2,232	0	6	92	85	256	0	14,770	0	10,515	0	4,564
Grand	0	0	1,667	0	4	69	63	192	0	11,035	0	7,856	0	3,410
Iron	0	0	7,119	0	18	293	270	818	0	47,118	0	33,544	0	14,559
Juab	0	0	3,237	0	8	133	123	372	0	21,425	0	15,253	0	6,620
Kane	0	0	1,099	0	3	45	42	126	0	7,273	0	5,178	0	2,247
Millard	0	0	6,449	0	17	265	244	741	0	42,682	0	30,385	0	13,188
Morgan	0	0	2,944	0	8	121	112	338	0	19,488	0	13,873	0	6,021
Piute	0	0	781	0	2	32	30	90	0	5,167	0	3,678	0	1,596
Rich	0	0	1,107	0	3	46	42	127	0	7,329	0	5,217	0	2,265
Salt Lake	0	0	299,168	0	766	12,308	11,336	34,374	0	1,980,036	0	1,409,602	0	611,808
San Juan	0	0	4,171	0	11	172	158	479	0	27,603	0	19,651	0	8,529
Sanpete	0	0	8,808	0	23	362	334	1,012	0	58,294	0	41,500	0	18,012
Sevier	0	0	6,474	0	17	266	245	744	0	42,850	0	30,505	0	13,240
Summit	0	0	6,546	0	17	269	248	752	0	43,327	0	30,845	0	13,388
Tooele	0	0	8,570	0	22	353	325	985	0	56,722	0	40,381	0	17,526
Uintah	0	0	9,915	0	25	408	376	1,139	0	65,623	0	46,718	0	20,277
Utah	0	0	83,763	0	214	3,446	3,174	9,624	0	554,384	0	394,670	0	171,298
Wasatch	0	0	3,534	0	9	145	134	406	0	23,391	0	16,652	0	7,227
Washington	0	0	13,581	0	35	559	515	1,560	0	89,884	0	63,989	0	27,773
Wayne	0	0	1,549	0	4	64	59	178	0	10,249	0	7,296	0	3,167
Weber	0	0	62,384	0	160	2,567	2,364	7,168	0	412,889	0	293,939	0	127,578
Total Statewide	0	0	699,637	0	1,791	28,784	26,512	80,389	0	4,630,538	0	3,296,515	0	1,430,783

Table A-4 Calculation of 1990 Utah Transportation Carbon Dioxide Emissions by County (Tons CO2)

County	Asphalt & Road Oil	Aviation Gasoline	Distillate Fuel Oil	Jet Fuel Kerosene	Kerosene	LPG	Lubricants	Motor Gasoline	Residual Fuel Oil	Bituminous Coal	Coke	Natural Gas	Wood	Other
Beaver	0	112	6,785	6,380	0	8	135	18,504	0	0	0	166	0	0
Box Elder	0	853	51,593	48,514	0	59	1,026	140,708	0	0	0	1,265	0	0
Cache	0	1,647	99,652	93,704	0	114	1,982	271,779	0	0	0	2,444	0	0
Carbon	0	472	28,553	26,849	0	33	568	77,871	0	0	0	700	0	0
Daggett	0	16	989	930	0	1	20	2,699	0	0	0	24	0	0
Davis	0	4,393	265,738	249,879	0	305	5,285	724,744	0	0	0	6,517	0	0
Duchesne	0	294	17,810	16,747	0	20	354	48,573	0	0	0	437	0	0
Emery	0	241	14,559	13,690	0	17	290	39,707	0	0	0	357	0	0
Garfield	0	92	5,583	5,250	0	6	111	15,227	0	0	0	137	0	0
Grand	0	154	9,329	8,772	0	11	186	25,443	0	0	0	229	0	0
Iron	0	488	29,542	27,779	0	34	587	80,570	0	0	0	724	0	0
Juab	0	136	8,198	7,709	0	9	163	22,359	0	0	0	201	0	0
Kane	0	120	7,280	6,845	0	8	145	19,853	0	0	0	179	0	0
Millard	0	264	15,973	15,019	0	18	318	43,562	0	0	0	392	0	0
Morgan	0	130	7,845	7,377	0	9	156	21,395	0	0	0	192	0	0
Piute	0	29	1,767	1,661	0	2	35	4,819	0	0	0	43	0	0
Rich	0	41	2,474	2,326	0	3	49	6,746	0	0	0	61	0	0
Salt Lake	0	17,010	1,029,027	967,615	0	1,182	20,464	2,806,456	0	0	0	25,235	0	0
San Juan	0	294	17,810	16,747	0	20	354	48,573	0	0	0	437	0	0
Sanpete	0	381	23,040	21,665	0	26	458	62,837	0	0	0	565	0	0
Sevier	0	360	21,768	20,469	0	25	433	59,367	0	0	0	534	0	0
Summit	0	367	22,192	20,868	0	25	441	60,524	0	0	0	544	0	0
Tooele	0	624	37,740	35,488	0	43	751	102,929	0	0	0	926	0	0
Uintah	0	519	31,380	29,507	0	36	624	85,581	0	0	0	770	0	0
Utah	0	6,215	375,990	353,552	0	432	7,477	1,025,436	0	0	0	9,220	0	0
Wasatch	0	236	14,276	13,424	0	16	284	38,936	0	0	0	350	0	0
Washington	0	1,147	69,403	65,261	0	80	1,380	189,282	0	0	0	1,702	0	0
Wayne	0	50	3,039	2,858	0	3	60	8,288	0	0	0	75	0	0
Weber	0	3,715	224,746	211,333	0	258	4,469	612,948	0	0	0	5,511	0	0
Total Statewide	0	40,401	2,444,079	2,298,218	0	2,807	48,605	6,665,718	0	0	0	59,937	0	0

Table A-5 Calculation of 1990 Utah Electric Utility Carbon Dioxide Emmisions by County (Tons CO2)

County	Asphalt & Road Oil	Aviation Gasoline	Distillate Fuel Oil	Jet Fuel Kerosene	Kerosene	LPG	Lubricants	Motor Gasoline	Residual Fuel Oil	Bituminous Coal	Coke	Natural Gas	Wood	Other
Beaver	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Box Elder	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cache	0	0	103	0	0	0	0	0	0	0	0	0	0	0
Carbon	0	0	259	0	0	0	0	0	0	609,288	0	0	0	0
Daggett	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Davis	0	0	318	0	0	0	0	0	0	0	0	143	0	0
Duchesne	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Emery	0	0	15,071	0	0	0	0	0	0	16,704,433	0	0	0	0
Garfield	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Iron	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Juab	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Kane	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Millard	0	0	19,449	0	0	0	0	0	0	12,428,333	0	0	0	0
Morgan	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Piute	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rich	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Salt Lake	0	0	1,186	0	0	0	0	0	0	4,994	0	54,103	0	0
San Juan	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sanpete	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sevier	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Summit	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tooele	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Uintah	0	0	0	0	0	0	0	0	0	3,112,397	0	0	0	0
Utah	0	0	377	0	0	0	0	0	0	73,955	0	563	0	0
Wasatch	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Washington	0	0	0	0	0	0	0	0	0	0	0	5,128	0	0
Wayne	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Weber	0	0	2,312	0	0	0	0	0	0	0	0	0	0	0
Total Statewide	0	0	39,075	0	0	0	0	0	0	32,933,400	0	59,937	0	0

Table A-6 Calculation of 1993 Utah Residential Carbon Dioxide Emmissions by County (Tons CO2)

County	Asphalt & Road Oil	Aviation Gasoline	Distillate Fuel Oil	Jet Fuel Kerosene	Kerosene	LPG	Lubricants	Motor Gasoline	Residual Fuel Oil	Bituminous Coal	Coke	Natural Gas	Wood	Other
Beaver	0	0	184	0	4	30	0	0	0	273	0	8,349	19	0
Box Elder	0	0	1,405	0	27	227	0	0	0	2,082	0	63,622	144	0
Cache	0	0	2,807	0	55	453	0	0	0	4,158	0	127,074	288	0
Carbon	0	0	764	0	15	123	0	0	0	1,131	0	34,566	78	0
Daggett	0	0	26	0	1	4	0	0	0	38	0	1,169	3	0
Davis	0	0	7,599	0	148	1,227	0	0	0	11,256	0	343,992	779	0
Duchesne	0	0	487	0	9	79	0	0	0	721	0	22,042	50	0
Emery	0	0	384	0	7	62	0	0	0	568	0	17,366	39	0
Garfield	0	0	155	0	3	25	0	0	0	229	0	7,013	16	0
Grand	0	0	277	0	5	45	0	0	0	410	0	12,522	28	0
Iron	0	0	878	0	17	142	0	0	0	1,300	0	39,743	90	0
Juab	0	0	229	0	4	37	0	0	0	339	0	10,353	23	0
Kane	0	0	201	0	4	32	0	0	0	298	0	9,101	21	0
Millard	0	0	432	0	8	70	0	0	0	639	0	19,537	44	0
Morgan	0	0	227	0	4	37	0	0	0	336	0	10,270	23	0
Piute	0	0	50	0	1	8	0	0	0	74	0	2,254	5	0
Rich	0	0	66	0	1	11	0	0	0	98	0	3,006	7	0
Salt Lake	0	0	28,661	0	559	4,628	0	0	0	42,456	0	1,297,480	2,936	0
San Juan	0	0	483	0	9	78	0	0	0	716	0	21,875	50	0
Sanpete	0	0	668	0	13	108	0	0	0	989	0	30,224	68	0
Sevier	0	0	605	0	12	98	0	0	0	896	0	27,384	62	0
Summit	0	0	727	0	14	117	0	0	0	1,076	0	32,896	74	0
Tooele	0	0	1,037	0	20	167	0	0	0	1,535	0	46,923	106	0
Uintah	0	0	871	0	17	141	0	0	0	1,290	0	39,409	89	0
Utah	0	0	10,734	0	209	1,733	0	0	0	15,900	0	485,930	1,100	0
Wasatch	0	0	413	0	8	67	0	0	0	612	0	18,702	42	0
Washington	0	0	2,165	0	42	350	0	0	0	3,207	0	98,022	222	0
Wayne	0	0	81	0	2	13	0	0	0	120	0	3,674	8	0
Weber	0	0	6,234	0	122	1,007	0	0	0	9,234	0	282,207	639	0
Total Statewide	0	0	68,847	0	1,343	11,117	0	0	0	101,984	0	3,116,705	7,054	0

Table A-7 Calculation of 1993 Utah Commercial Carbon Dioxide Emmissions by County (Tons CO2)

County	Asphalt & Road Oil	Aviation Gasoline	Distillate Fuel Oil	Jet Fuel Kerosene	Kerosene	LPG	Lubricants	Motor Gasoline	Residual Fuel Oil	Bituminous Coal	Coke	Natural Gas	Wood	Other
Beaver	0	0	347	0	3	4	0	17	0	391	0	2,807	0	0
Box Elder	0	0	1,936	0	15	23	0	93	0	2,182	0	15,679	0	0
Cache	0	0	6,010	0	47	70	0	288	0	6,771	0	48,659	0	0
Carbon	0	0	1,586	0	13	18	0	76	0	1,787	0	12,845	0	0
Daggett	0	0	91	0	1	1	0	4	0	102	0	736	0	0
Davis	0	0	14,280	0	113	166	0	685	0	16,089	0	115,624	0	0
Duchesne	0	0	833	0	7	10	0	40	0	938	0	6,744	0	0
Emery	0	0	484	0	4	6	0	23	0	545	0	3,917	0	0
Garfield	0	0	403	0	3	5	0	19	0	454	0	3,265	0	0
Grand	0	0	807	0	6	9	0	39	0	909	0	6,531	0	0
Iron	0	0	2,134	0	17	25	0	102	0	2,404	0	17,276	0	0
Juab	0	0	434	0	3	5	0	21	0	489	0	3,513	0	0
Kane	0	0	493	0	4	6	0	24	0	555	0	3,990	0	0
Millard	0	0	702	0	6	8	0	34	0	791	0	5,685	0	0
Morgan	0	0	245	0	2	3	0	12	0	276	0	1,983	0	0
Piute	0	0	48	0	0	1	0	2	0	54	0	389	0	0
Rich	0	0	113	0	1	1	0	5	0	127	0	913	0	0
Salt Lake	0	0	85,510	0	675	995	0	4,099	0	96,343	0	692,360	0	0
San Juan	0	0	838	0	7	10	0	40	0	944	0	6,782	0	0
Sanpete	0	0	1,102	0	9	13	0	53	0	1,242	0	8,922	0	0
Sevier	0	0	1,163	0	9	14	0	56	0	1,311	0	9,420	0	0
Summit	0	0	2,452	0	19	29	0	118	0	2,763	0	19,857	0	0
Tooele	0	0	2,063	0	16	24	0	99	0	2,324	0	16,701	0	0
Uintah	0	0	1,502	0	12	17	0	72	0	1,692	0	12,157	0	0
Utah	0	0	24,376	0	192	284	0	1,168	0	27,464	0	197,370	0	0
Wasatch	0	0	687	0	5	8	0	33	0	774	0	5,561	0	0
Washington	0	0	4,376	0	35	51	0	210	0	4,930	0	35,429	0	0
Wayne	0	0	157	0	1	2	0	8	0	177	0	1,271	0	0
Weber	0	0	15,087	0	119	176	0	723	0	16,998	0	122,156	0	0
Total Statewide	0	0	170,258	0	1,343	1,981	0	8,161	0	191,826	0	1,378,543	0	0

Table A-8 Calculation of 1993 Utah Industrial Carbon Dioxide Emmissions by County (Tons CO2)

County	Asphalt & Road Oil	Aviation Gasoline	Distillate Fuel Oil	Jet Fuel Kerosene	Kerosene	LPG	Lubricants	Motor Gasoline	Residual Fuel Oil	Bituminous Coal	Coke	Natural Gas	Wood	Other
Beaver	0	0	2,060	0	2	66	60	244	0	10,187	0	7,985	0	3,208
Box Elder	0	0	50,737	0	53	1,635	1,479	6,014	0	250,931	0	196,689	0	79,032
Cache	0	0	60,189	0	63	1,940	1,755	7,134	0	297,675	0	233,329	0	93,754
Carbon	0	0	8,898	0	9	287	259	1,055	0	44,007	0	34,495	0	13,860
Daggett	0	0	178	0	0	6	5	21	0	881	0	690	0	277
Davis	0	0	67,071	0	71	2,162	1,956	7,950	0	331,710	0	260,007	0	104,474
Duchesne	0	0	8,590	0	9	277	250	1,018	0	42,484	0	33,301	0	13,381
Emery	0	0	7,786	0	8	251	227	923	0	38,510	0	30,185	0	12,129
Garfield	0	0	2,093	0	2	67	61	248	0	10,353	0	8,115	0	3,261
Grand	0	0	2,281	0	2	74	67	270	0	11,282	0	8,843	0	3,553
Iron	0	0	9,172	0	10	296	267	1,087	0	45,364	0	35,558	0	14,288
Juab	0	0	3,561	0	4	115	104	422	0	17,613	0	13,805	0	5,547
Kane	0	0	1,333	0	1	43	39	158	0	6,593	0	5,168	0	2,076
Millard	0	0	6,126	0	6	197	179	726	0	30,298	0	23,749	0	9,543
Morgan	0	0	3,619	0	4	117	106	429	0	17,898	0	14,029	0	5,637
Piute	0	0	833	0	1	27	24	99	0	4,118	0	3,227	0	1,297
Rich	0	0	1,203	0	1	39	35	143	0	5,950	0	4,664	0	1,874
Salt Lake	0	0	354,184	0	373	11,416	10,327	41,981	0	1,751,684	0	1,373,037	0	551,702
San Juan	0	0	5,424	0	6	175	158	643	0	26,823	0	21,025	0	8,448
Sanpete	0	0	9,067	0	10	292	264	1,075	0	44,841	0	35,148	0	14,123
Sevier	0	0	7,647	0	8	246	223	906	0	37,819	0	29,644	0	11,911
Summit	0	0	8,585	0	9	277	250	1,018	0	42,460	0	33,282	0	13,373
Tooele	0	0	10,178	0	11	328	297	1,206	0	50,338	0	39,457	0	15,854
Uintah	0	0	10,838	0	11	349	316	1,285	0	53,599	0	42,013	0	16,881
Utah	0	0	108,486	0	114	3,497	3,163	12,859	0	536,539	0	420,560	0	168,986
Wasatch	0	0	4,134	0	4	133	121	490	0	20,445	0	16,025	0	6,439
Washington	0	0	21,329	0	22	687	622	2,528	0	105,485	0	82,683	0	33,223
Wayne	0	0	1,550	0	2	50	45	184	0	7,664	0	6,007	0	2,414
Weber	0	0	73,206	0	77	2,360	2,134	8,677	0	362,056	0	283,793	0	114,032
Total Statewide	0	0	850,357	0	895	27,408	24,793	100,792	0	4,205,607	0	3,296,515	0	1,324,579

Table A-9 Calculation of 1993 Utah Transportation Carbon Dioxide Emmissions by County (Tons CO2)

County	Asphalt & Road Oil	Aviation Gasoline	Distillate Fuel Oil	Jet Fuel Kerosene	Kerosene	LPG	Lubricant	Motor Gasoline	Residual Fuel Oil	Bituminous Coal	Coke	Natural Gas	Wood	Other
Beaver	0	116	6,982	6,433	0	6	121	20,293	0	0	0	482	0	0
Box Elder	0	887	53,205	49,019	0	47	922	154,635	0	0	0	3,670	0	0
Cache	0	1,772	106,269	97,908	0	94	1,842	308,860	0	0	0	7,331	0	0
Carbon	0	482	28,907	26,632	0	26	501	84,014	0	0	0	1,994	0	0
Daggett	0	16	978	901	0	1	17	2,841	0	0	0	67	0	0
Davis	0	4,796	287,673	265,039	0	255	4,985	836,088	0	0	0	19,846	0	0
Duchesne	0	307	18,433	16,983	0	16	319	53,574	0	0	0	1,272	0	0
Emery	0	242	14,523	13,381	0	13	252	42,210	0	0	0	1,002	0	0
Garfield	0	98	5,865	5,404	0	5	102	17,046	0	0	0	405	0	0
Grand	0	175	10,472	9,648	0	9	181	30,436	0	0	0	722	0	0
Iron	0	554	33,236	30,621	0	29	576	96,596	0	0	0	2,293	0	0
Juab	0	144	8,658	7,977	0	8	150	25,164	0	0	0	597	0	0
Kane	0	127	7,611	7,012	0	7	132	22,120	0	0	0	525	0	0
Millard	0	272	16,339	15,053	0	14	283	47,486	0	0	0	1,127	0	0
Morgan	0	143	8,588	7,913	0	8	149	24,961	0	0	0	592	0	0
Piute	0	31	1,885	1,737	0	2	33	5,479	0	0	0	130	0	0
Rich	0	42	2,514	2,316	0	2	44	7,306	0	0	0	173	0	0
Salt Lake	0	18,088	1,085,052	999,681	0	962	18,803	3,153,582	0	0	0	74,855	0	0
San Juan	0	305	18,294	16,854	0	16	317	53,168	0	0	0	1,262	0	0
Sanpete	0	421	25,276	23,287	0	22	438	73,462	0	0	0	1,744	0	0
Sevier	0	382	22,901	21,099	0	20	397	66,558	0	0	0	1,580	0	0
Summit	0	459	27,510	25,346	0	24	477	79,956	0	0	0	1,898	0	0
Tooele	0	654	39,241	36,153	0	35	680	114,048	0	0	0	2,707	0	0
Uintah	0	549	32,956	30,364	0	29	571	95,784	0	0	0	2,274	0	0
Utah	0	6,774	406,372	374,399	0	360	7,042	1,181,074	0	0	0	28,034	0	0
Wasatch	0	261	15,640	14,410	0	14	271	45,457	0	0	0	1,079	0	0
Washington	0	1,367	81,974	75,524	0	73	1,421	238,247	0	0	0	5,655	0	0
Wayne	0	51	3,072	2,830	0	3	53	8,929	0	0	0	212	0	0
Weber	0	3,934	236,003	217,435	0	209	4,090	685,917	0	0	0	16,281	0	0
Total Statewide	0	43,450	2,606,429	2,401,357	0	2,312	45,168	7,575,292	0	0	0	179,810	0	0

Table A-10 Calculation of 1993 Utah Electric Utility Carbon Dioxide Emmissions by County (Tons CO2)

County	Asphalt & Road Oil	Aviation Gasoline	Distillate Fuel Oil	Jet Fuel Kerosene	Kerosene	LPG	Lubricants	Motor Gasoline	Residual Fuel Oil	Bituminous Coal	Coke	Natural Gas	Wood	Other
Beaver	0	0	139	0	0	0	0	0	0	0	0	0	0	0
Box Elder	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cache	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Carbon	0	0	740	0	0	0	0	0	0	161,817	0	0	0	0
Daggett	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Davis	0	0	754	0	0	0	0	0	0	0	0	4,639	0	0
Duchesne	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Emery	0	0	11,852	0	0	0	0	0	0	17,958,291	0	0	0	0
Garfield	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Iron	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Juab	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Kane	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Millard	0	0	10,025	0	0	0	0	0	0	12,244,929	0	0	0	0
Morgan	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Piute	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rich	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Salt Lake	0	0	0	0	0	0	0	0	0	1,902	0	265,041	0	0
San Juan	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sanpete	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sevier	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Summit	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tooele	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Uintah	0	0	0	0	0	0	0	0	0	3,583,226	0	0	0	0
Utah	0	0	2,075	0	0	0	0	0	0	32,209	0	36,426	0	0
Wasatch	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Washington	0	0	0	0	0	0	0	0	0	0	0	53,514	0	0
Wayne	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Weber	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Statewide	0	0	25,585	0	0	0	0	0	0	33,982,374	0	359,620	0	0

Table A-11 County Population and Employment as a Ratio of Statewide Population and Employment

County	Year	Actual Number of Resident	Commercial	Industrial	Transportation	Electric	Fraction of State Total Resident	Commercial	Industrial	Transportation	Electric
Beaver	1990	4,800	1,149	442	113	30	0.00	0.00	0.00	0.01	0.01
	1993	5,000	1,343	428	107	28	0.00	0.00	0.00	0.00	0.01
Box Elder	1990	36,500	7,162	10,105	183	0	0.02	0.01	0.06	0.02	0.00
	1993	38,100	7,502	10,543	241	0	0.02	0.01	0.06	0.01	0.00
Cache	1990	70,500	20,069	11,435	435	0	0.04	0.03	0.07	0.05	0.00
	1993	76,099	23,282	12,507	587	0	0.04	0.04	0.07	0.02	0.00
Carbon	1990	20,200	5,851	2,035	246	116	0.01	0.01	0.01	0.03	0.03
	1993	20,700	6,146	1,849	210	152	0.01	0.01	0.01	0.01	0.04
Daggett	1990	700	310	47	18	0	0.00	0.00	0.00	0.00	0.00
	1993	700	352	37	0	0	0.00	0.00	0.00	0.00	0.00
Davis	1990	188,000	51,669	11,320	2,018	0	0.11	0.09	0.07	0.22	0.00
	1993	206,001	55,323	13,937	1,882	0	0.11	0.08	0.08	0.06	0.00
Duchesne	1990	12,600	2,960	1,616	271	70	0.01	0.01	0.01	0.03	0.02
	1993	13,200	3,227	1,785	319	76	0.01	0.00	0.01	0.01	0.02
Emery	1990	10,300	1,855	1,782	116	609	0.01	0.00	0.01	0.01	0.16
	1993	10,400	1,874	1,618	147	579	0.01	0.00	0.01	0.00	0.16
Garfield	1990	3,950	1,311	526	13	25	0.00	0.00	0.00	0.00	0.01
	1993	4,200	1,562	435	10	21	0.00	0.00	0.00	0.00	0.01
Grand	1990	6,600	2,307	393	69	0	0.00	0.00	0.00	0.01	0.00
	1993	7,499	3,125	474	66	0	0.00	0.00	0.00	0.00	0.00
Iron	1990	20,900	6,678	1,678	163	145	0.01	0.01	0.01	0.02	0.04
	1993	23,800	8,266	1,906	148	54	0.01	0.01	0.01	0.00	0.02
Juab	1990	5,800	1,410	763	28	0	0.00	0.00	0.00	0.00	0.00
	1993	6,200	1,681	740	60	0	0.00	0.00	0.00	0.00	0.00
Kane	1990	5,150	1,607	259	31	0	0.00	0.00	0.00	0.00	0.00
	1993	5,450	1,909	277	9	0	0.00	0.00	0.00	0.00	0.00
Millard	1990	11,300	2,506	1,520	52	610	0.01	0.00	0.01	0.01	0.16
	1993	11,700	2,720	1,273	60	593	0.01	0.00	0.01	0.00	0.17
Morgan	1990	5,550	868	694	0	0	0.00	0.00	0.00	0.00	0.00
	1993	6,150	949	752	5	0	0.00	0.00	0.00	0.00	0.00
Piute	1990	1,250	176	184	12	0	0.00	0.00	0.00	0.00	0.00
	1993	1,350	186	173	15	0	0.00	0.00	0.00	0.00	0.00
Rich	1990	1,750	399	261	0	0	0.00	0.00	0.00	0.00	0.00
	1993	1,800	437	250	0	0	0.00	0.00	0.00	0.00	0.00
Salt Lake	1990	728,000	292,107	70,514	0	1,875	0.42	0.50	0.43	0.00	0.49
	1993	777,001	331,275	73,598	22,433	1,712	0.42	0.50	0.42	0.72	0.48
San Juan	1990	12,600	2,742	983	143	0	0.01	0.00	0.01	0.02	0.00
	1993	13,100	3,245	1,127	160	0	0.01	0.00	0.01	0.01	0.00
Sanpete	1990	16,300	3,424	2,076	74	0	0.01	0.01	0.01	0.01	0.00
	1993	18,100	4,269	1,884	79	0	0.01	0.01	0.01	0.00	0.00
Sevier	1990	15,400	4,125	1,526	285	93	0.01	0.01	0.01	0.03	0.02
	1993	16,399	4,507	1,589	329	82	0.01	0.01	0.01	0.01	0.02
Summit	1990	15,700	7,666	1,543	165	0	0.01	0.01	0.01	0.02	0.00
	1993	19,700	9,501	1,784	125	0	0.01	0.01	0.01	0.00	0.00
Tooele	1990	26,700	9,077	2,020	177	0	0.02	0.02	0.01	0.02	0.00
	1993	28,100	7,991	2,115	166	0	0.02	0.01	0.01	0.01	0.00
Uintah	1990	22,200	5,190	2,337	262	0	0.01	0.01	0.01	0.03	0.00
	1993	23,600	5,817	2,252	289	0	0.01	0.01	0.01	0.01	0.00
Utah	1990	266,000	81,747	19,743	1,933	0	0.15	0.14	0.12	0.21	0.00
	1993	291,001	94,436	22,543	1,483	0	0.16	0.14	0.13	0.05	0.00
Wasatch	1990	10,100	2,385	833	69	0	0.01	0.00	0.01	0.01	0.00
	1993	11,200	2,661	859	65	0	0.01	0.00	0.00	0.00	0.00
Washington	1990	49,100	13,119	3,201	743	0	0.03	0.02	0.02	0.08	0.00
	1993	58,701	16,952	4,432	812	0	0.03	0.03	0.03	0.03	0.00
Wayne	1990	2,150	475	365	0	0	0.00	0.00	0.00	0.00	0.00
	1993	2,200	608	322	0	0	0.00	0.00	0.00	0.00	0.00
Weber	1990	159,000	54,214	14,704	1,477	227	0.09	0.09	0.09	0.16	0.06
	1993	169,001	58,448	15,212	1,488	236	0.09	0.09	0.09	0.05	0.07
Statewide	1990	1,729,100	584,558	164,905	9,096	3,800					
Statewide	1993	1,866,452	659,594	176,701	31,295	3,533					

State of Utah Economic and Demographic Projections for 1994, Governor's Office of Planning and Budget

Table A-12 Utah Counties with Electric Utilities.

County	*Electric Utility*
Cache	Logan City Light and Power
Carbon	PacifiCorp Helper Plant
Davis	Bountiuful City Light and Power
Emery	PacifiCorp Huntington and Castledale Plants
Millard	Intermountain Power Generation
Salt Lake	LDS Hospital University of Utah PacifiCorp Gadsby and South Temple
Uintah	Deseret Generation
Utah	Payson City BYU Springville City
Weber	PacifiCorp Ogden
Washington	City of St George

Appendix B

Coal Mining

Calculations for 1990 Totals

Underground mines

Low:

$$\mathbf{22{,}012{,}000}(tons)\times 370(\frac{ft^3}{ton})=8{,}144{,}440{,}000 ft^3 methane$$

$$\frac{8{,}144{,}440{,}000 ft^3 methane}{1{,}000{,}000}=8{,}144.44\times 10^6 ft^3 methane$$

High:

$$22{,}012{,}000(tons)\times 470(\frac{ft^3}{ton})=10{,}345{,}640.00 ft^3 methane$$

$$\frac{10{,}345{,}640.00 ft^3 methane}{1{,}000{,}000}=10{,}345.64\times 10^6 ft^3 methane$$

Post-mining

Low:

$$22{,}012{,}000(tons)\times 55\frac{ft^3}{ton}=1{,}210{,}660{,}000 ft^3 methane$$

$$\frac{1{,}210{,}660{,}000 ft^3 methane}{1{,}000{,}000}=1{,}210.66\times 10^6 ft^3 methane$$

High:

$$\mathbf{22{,}012{,}000}(tons)\times 90\frac{ft^3}{ton}=1{,}981{,}080{,}000ft^3 methane$$

$$\frac{1{,}981080{,}000ft^3 methane}{1{,}000{,}000}=1{,}981.08\times 10^6 ft^3 methane$$

Low:

$$8{,}144.44\times 10^6 ft^3 methane+1{,}210.66\times 10^6 ft^3 methane=9{,}355.1\times 10^6 ft^3 methane$$

High:

$$10{,}345.44\times 10^6 ft^3 methane+1{,}981.08\times 10^6 ft^3 methane=12{,}326.72\times 10^6 ft^3 methane$$

Low plus High:

$$9{,}355.1\times 10^6 ft^3 methane+12{,}326.72\times 10^6 ft^3 methane=21{,}681.82\times 10^6 ft^3 methane$$

Average:

$$\frac{21{,}681.82\times 10^6 ft^3 methane}{2}=10{,}840.91\times 10^6 ft^3 methane$$

Subtract Recovered Methane:

$$10{,}840.91\times 10^6 ft^3 methane-126.503\times 10^6 ft^3 methane=10{,}714.407\times 10^6 ft^3 methane$$

Convert Cubic Feet Methane to Tons Methane

$$10{,}714.407\times 10^6 ft^3 methane\times 20.66\frac{tons}{10^6 ft^3}=221{,}359.65 tons$$

Calculations for 1993 Totals

Underground mines

Low:

$$\mathbf{21{,}723{,}000}(tons)\times 370(\frac{ft^3}{ton})=8{,}037{,}510{,}000 ft^3 methane$$

$$\frac{8{,}037{,}510{,}000 ft^3 methane}{1{,}000{,}000}=8{,}037.51\times 10^6 ft^3 methane$$

High:

$$21{,}723{,}000(tons)\times 470(\frac{ft^3}{ton})=10{,}209{,}810{,}000 ft^3 methane$$

$$\frac{10{,}209{,}810{,}000 ft^3 methane}{1{,}000{,}000}=10{,}209.81\times 10^6 ft^3 methane$$

Post-mining

Low:

$$21{,}723{,}000(tons)\times 55\frac{ft^3}{ton}=1{,}194{,}765{,}000 ft^3 methane$$

$$\frac{1{,}194{,}765{,}000 ft^3 methane}{1{,}000{,}000}=1{,}194.765\times 10^6 ft^3 methane$$

High:

$$\mathbf{21,723,000}(tons)\times 90\frac{ft^3}{ton}=1,955,070,000ft^3 methane$$

$$\frac{1,955,070,000ft^3 methane}{1,000,000}=1,955.07\times 10^6 ft^3 methane$$

Low:

$$8,037.51\times 10^6 ft^3 methane+1,194.765\times 10^6 ft^3 methane=9,232.275\times 10^6 ft^3 methane$$

High:

$$10,209.81\times 10^6 ft^3 methane+1,955.07\times 10^6 ft^3 methane=12,164.88\times 10^6 ft^3 methane$$

Low plus High:

$$9,232.275\times 10^6 ft^3 methane+12,164.88\times 10^6 ft^3 methane=21,397.15\times 10^6 ft^3 methane$$

Average:

$$\frac{21,397.15\times 10^6 ft^3 methane}{2}=10,698.58\times 10^6 ft^3 methane$$

Subtract Recovered Methane:

$$10,698.58\times 10^6 ft^3 methane-383.271\times 10^6 ft^3 methane=10,315.31\times 10^6 ft^3 methane$$

Convert Cubic Feet Methane to Tons Methane

Appendic C

Methane Emissions from Landfills

Table C-1 Estimates of Methane Emissions from Landfills in Utah

County	Year	Population	Avg. Annual Growth Rate (%)	Correction Factor	Est. Waste in Place (Tons)	Methane Generated (Tons/Year)			Total Methane after Adjustment for Flaring, Rec and Oxidation (Tons/Year)
						Small MSW Landfills	Large MSW Landfills	Industrial Landfills	
Beaver	1990	4,800	0.41	0.87	72,154.53	21.00	0.00	1.47	20.22
	1993	5,000	0.61	0.86	73,920.96	21.52	0.00	1.51	20.72
Box Elder	1990	36,500	0.84	0.84	529,213.18	154.03	0.00	10.78	148.33
	1993	38,100	0.68	0.85	559,970.64	162.99	0.00	11.41	156.95
Cache	1990	70,500	2.22	0.74	901,538.77	262.40	5785.60	423.36	5824.22
	1993	76,099	2.22	0.74	973,137.57	283.24	5958.10	436.89	6010.41
Carbon	1990	20,200	0.02	0.90	313,419.07	91.22	5785.60	411.38	5659.38
	1993	20,700	0.39	0.87	311,679.77	90.72	5958.10	423.42	5825.01
Daggett	1990	700	-0.99	0.97	11,737.74	3.42	0.00	0.24	3.29
	1993	700	-0.18	0.91	11,034.66	3.21	0.00	0.22	3.09
Davis	1990	188,000	3.48	0.65	2,110,370.91	614.24	11571.20	852.98	11734.58
	1993	206,001	3.21	0.67	2,381,408.36	693.13	11916.20	882.65	12142.79
Duchesne	1990	12,600	2.08	0.75	163,313.45	47.53	0.00	3.33	45.78
	1993	13,200	2.26	0.74	168,144.03	48.94	0.00	3.43	47.13
Emery	1990	10,300	2.33	0.73	130,309.25	37.93	0.00	2.65	36.52
	1993	10,400	2.35	0.73	131,316.47	38.22	0.00	2.68	36.81
Garfield	1990	3,950	0.45	0.87	59,181.24	17.23	0.00	1.21	16.59
	1993	4,200	0.74	0.85	61,416.57	17.88	0.00	1.25	17.21
Grand	1990	6,600	-0.60	0.94	107,478.35	31.28	0.00	2.19	30.13
	1993	7,499	-0.33	0.92	119,607.53	34.81	0.00	2.44	33.52
Iron	1990	20,900	2.20	0.74	267,783.01	77.94	0.00	5.46	75.06
	1993	23,800	2.72	0.71	289,593.19	84.29	0.00	5.90	81.17
Juab	1990	5,800	0.91	0.84	83,590.71	24.33	0.00	1.70	23.43
	1993	6,200	1.03	0.83	88,433.02	25.74	0.00	1.80	24.79
Kane	1990	5,150	2.33	0.73	65,154.62	18.96	0.00	1.33	18.26
	1993	5,450	2.44	0.73	68,206.66	19.85	0.00	1.39	19.12
Millard	1990	11,300	1.24	0.81	158,233.78	46.06	0.00	3.22	44.35
	1993	11,700	1.57	0.79	159,047.31	46.29	0.00	3.24	44.58
Morgan	1990	5,550	2.17	0.75	71,316.30	20.76	0.00	1.45	19.99
	1993	6,150	2.44	0.73	76,967.14	22.40	0.00	1.57	21.57

Table C-1 Estimates of Methane Emissions from Landfills in Utah (Continued)

County	Year	Population	Avg. Annual Growth Rate (%)	Correction Factor	Est. Waste in Place (Tons)	Methane Generated (Tons/Year)			Total Methane after Adjustment for Flaring, Rec and Oxidation (Tons/Year)
						Small MSW Landfills	Large MSW Landfills	Industrial Landfills	
Piute	1990	1,250	-0.55	0.94	20,278.25	5.90	0.00	0.41	5.68
	1993	1,350	-0.04	0.90	21,046.76	6.13	0.00	0.43	5.90
Rich	1990	1,750	0.20	0.89	26,762.04	7.79	0.00	0.55	7.50
	1993	1,800	0.29	0.88	27,325.79	7.95	0.00	0.56	7.66
Salt Lake	1990	713,000	2.00	0.76	9,312,197.19	2,710.41	11,571.20	999.71	13,753.18
	1993	747,001	1.92	0.76	9,830,372.97	2,861.23	11,916.20	1,034.42	14,230.66
San Juan	1990	12,600	1.34	0.80	174,875.26	50.90	0.00	3.56	49.02
	1993	13,100	1.86	0.77	173,367.83	50.46	0.00	3.53	48.59
Sanpete	1990	16,300	1.55	0.79	221,982.98	64.61	0.00	4.52	62.22
	1993	18,100	1.85	0.77	239,763.21	69.79	0.00	4.88	67.20
Sevier	1990	15,400	1.36	0.80	213,354.50	62.10	0.00	4.35	59.80
	1993	16,399	1.65	0.78	221,297.73	64.41	0.00	4.51	62.03
Summit	1990	15,700	3.6	0.64	173,902.25	50.62	0.00	3.54	48.74
	1993	19,700	4.32	0.59	200,620.32	58.39	0.00	4.09	56.23
Tooele	1990	26,700	1.18	0.82	375,866.30	109.40	0.00	7.66	105.35
	1993	28,100	0.94	0.83	403,937.24	117.57	0.00	8.23	113.22
Uintah	1990	22,200	2.11	0.75	286,916.90	83.51	0.00	5.85	80.42
	1993	23,600	2.09	0.75	305,596.04	88.95	0.00	6.23	85.66
Utah	1990	266,000	3.26	0.67	3,058,515.44	890.21	5,785.60	467.31	6,428.80
	1993	291,001	3.38	0.66	3,302,680.26	961.28	5,958.10	484.36	6,663.36
Wasatch	1990	10,100	2.37	0.73	127,278.01	37.05	0.00	2.59	35.67
	1993	11,200	2.64	0.71	137,390.19	39.99	0.00	2.80	38.51
Washington	1990	49,100	5.74	0.49	413,567.58	120.37	5,785.60	413.42	5,687.45
	1993	58,701	6.23	0.45	458,769.59	133.53	5,958.10	426.41	5,866.24
Wayne	1990	2,150	0.75	0.85	31,412.77	9.14	0.00	0.64	8.80
	1993	2,200	0.81	0.84	31,979.62	9.31	0.00	0.65	8.96
Weber	1990	159,000	1.08	0.82	2,258,021.02	657.22	5,785.60	451.00	6,204.43
	1993	169,001	1.19	0.82	2,376,997.29	691.85	5,958.10	465.50	6,403.90
Statewide Total	**1990**	**1,714,100**			**21,739,725.42**	**6,327.56**	**52,070.38**	**4,087.86**	**56,237.22**
	1993	**1,836,452**			**23,205,028.73**	**6,754.06**	**53,622.90**	**4,226.39**	**58,143.01**

Appendix D

Domesticated Animals

Table D-1 Methane Emissions from Domesticated Animals

Average Animal Population (head)			Statewide Populations 1990	Statewide Populations 1993	Western U.S. emissions factors (lbs methane/head/yr)	1990 Emissions (lbs)	1990 Emissions (tons	1993 Emissions (lbs)	1993 Emissions (tons
Cattle*									
	Dairy								
		0-12 month replacements	27,000	26,000	45.5	1,228,500.00	614.25	1,183,000.00	591.50
		12-24 month replacements**	52,000	45,000	134.6	6,999,200.00	3,499.60	6,057,000.00	3,028.50
		Mature Cows	80,000	80,000	262.5	21,000,000.00	10,500.00	21,000,000.00	10,500.00
		Total Dairy	159,000	151,000		29,227,700.00	14,613.85	28,240,000.00	14,120.00
	Beef								
		0-12 month replacements	108,000	110,000	49.9	5,389,200.00	2,694.60	5,489,000.00	2,744.50
		12-24 month replacements**	58,000	69,000	142.7	8,276,600.00	4,138.30	9,846,300.00	4,923.15
		Mature Cows	321,000	340,000	152.0	48,792,000.00	24,396.00	51,680,000.00	25,840.00
		Bulls #	19,000	20,000	220.0	4,180,000.00	2,090.00	4,400,000.00	2,200.00
		Steers ##	109,000	115,000	220.0	23,980,000.00	11,990.00	25,300,000.00	12,650.00
		Total Beef	615,000	654,000		90,617,800.00	45,308.90	96,715,300.00	48,357.65
Buffalo			950	950	220.0	209,000.00	104.50	209,000.00	104.50
Sheep			509,000	440,000	17.6	8,958,400.00	4,479.20	7,744,000.00	3,872.00
Goats ^			2,120	2,129	11.0	23,320.00	11.66	23,419.00	11.71
Swine			33,000	40,000	3.3	108,900.00	54.45	132,000.00	66.00
Horses ^^			34,700	34,778	39.6	1,374,120.00	687.06	1,377,208.80	688.60
Mules/Asses ^^^			560	565	48.5	27,160.00	13.58	27,402.50	13.70
		Total	1,354,330	1,323,422		130,546,400	65,273.20	134,468,330	67,234.17
Big Game			428,505	293,260		16,446,047.63	8,223.02	12,023,997.30	6,012.00
		Total Including Big Game	1,782,835	1,616,682		146,992,447.62	73,496.22	146,492,327.60	73,246.16

* Beginning 1/1/71, classification estimates for Cattle were changed from sex and age to sex and weight.
** Heifers 500 lbs and over are assumed to be at least 12 months old, and will be categorized as 12-24 month replacements.
\# Bulls 500 lbs and over are categorized only as Beef Cattle.
Steers 500 lbs and over are added to the Bulls category for Beef Cattle.
Steers, Heifers, and Bulls under 500 lbs are assumed to be less than 12 months old,
and are ratioed to the Beef and Dairy 0-12 month replacements category based on the total beef cows and dairy cows for 1/1/91.
^ Goat populations are based on a 1992 Deparment of Agriculture census.
^^ Horse populations are based on a 1992 Deparment of Agriculture census. Category includes ponies.
^^^ Mules/Asses populations are based on a 1992 Deparment of Agriculture census. Category includes Mules, Burros, Donkeys.

1990				1993			
All Cows & Heifers that have calved (1000 head)				All Cows & Heifers that have calved (1000 head)			
Beef Cows	Dairy Cows		Total	Beef Cows	Dairy Cows		Total
321	80	=	401	340	80	=	420
80.05%	19.95%	=	100.00%	80.95%	19.05%	=	100.00%
Steers, Heifers, Bulls under 500 lbs (1000 head)				Steers, Heifers, Bulls under 500 lbs (1000 head)			
108	27	=	135	110	26	=	136

Table D-2 Methane Emissions from Domesticated Animals - by County

Livestock/Products (million $) 1990	1993	Average Animal Population (head)		Statewide Populations 1990	1993	Beaver 1990	Emissions Tons	1993	Emissions Tons
574.3	556.3	Cattle*				2.70%		3.20%	
		Dairy							
			0-12 month replacements	27,000	26,000	1,013	23.03	878	19.96
			12-24 month replacements**	52,000	45,000	1,950	131.24	1,519	102.21
			Mature Cows	80,000	80,000	3,000	393.75	2,700	354.38
		Beef							
			0-12 month replacements	108,000	110,000	3,364	83.94	4,432	110.59
			12-24 month replacements**	58,000	69,000	1,807	128.92	2,780	198.37
			Mature Cows	321,000	340,000	10,000	760.00	13,700	1,041.20
			Bulls #	19,000	20,000	592	65.11	806	88.65
			Steers ##	109,000	115,000	3,396	373.52	4,634	509.72
		Buffalo		950	950	0	0.00	0	0.00
		Sheep		509,000	440,000	1,000	8.80	499	4.39
		Goats ^		2,120	2,129	57	0.31	68	0.37
		Swine		33,000	40,000	891	1.47	1,280	2.11
		Horses ^^		34,700	34,778	937	18.54	1,113	22.03
		Mules/Asses ^^^		560	565	15	0.37	18	0.44
		Big Game @		427,555	292,310		326.83		238.39
		Total	1990 County Totals	1,781,885	1,615,732	1990	2,385.31		
			1993 County Totals			1993			2,692.82

Table D-2 Methane Emissions from Domesticated Animals - by County (continued)

Livestock/Products (million $) 1990	1993	Average Animal Population (head)		Box Elder 1990	Emissions Tons	1993	Emissions Tons	Cache 1990	Emissions Tons	1993
574.3	556.3	Cattle*		8.41%		8.25%		13.01%		14.36%
		Dairy								
			0-12 month replacements	2,700	61.43	2,860	65.07	7,425	168.92	7,053
			12-24 month replacements**	5,200	349.96	4,950	333.14	14,300	962.39	12,206
			Mature Cows	8,000	1,050.00	8,800	1,155.00	22,000	2,887.50	21,700
		Beef								
			0-12 month replacements	9,757	243.44	8,509	212.30	2,019	50.37	2,815
			12-24 month replacements**	5,240	373.87	5,337	380.82	1,084	77.35	1,766
			Mature Cows	29,000	2,204.00	26,300	1,998.80	6,000	456.00	8,700
			Bulls #	1,598	175.77	1,547	170.18	355	39.07	512
			Steers ##	9,847	1,083.21	8,896	978.51	2,037	224.11	2,943
		Buffalo		0	0.00	0	0.00	0	0.00	0
		Sheep		41,000	360.80	36,800	323.84	6,000	52.80	5,000
		Goats ^		178	0.98	176	0.97	276	1.52	306
		Swine		2,775	4.58	3,300	5.45	4,293	7.08	5,744
		Horses ^^		2,918	57.78	2,870	56.82	4,514	89.39	4,994
		Mules/Asses ^^^		47	1.14	47	1.13	73	1.77	81
		Big Game @			326.83		238.39		326.83	
		Total	1990 County Totals		6,482.60				5,505.44	
			1993 County Totals				5,920.40			

Table D-2 Methane Emissions from Domesticated Animals - by County (continued)

Livestock/Products (million $) 1990	1993	Average Animal Population (head)		Carbon 1990	Emissions Tons	1993	Emissions Tons	Daggett 1990	Emissions Tons	1993
574.3	556.3	Cattle*		0.78%		0.63%		0.26%		0.18%
		Dairy								
			0-12 month replacements	0	0.00	0	0.00	0	0.00	0
			12-24 month replacements**	0	0.00	0	0.00	0	0.00	0
			Mature Cows	0	0.00	0	0.00	0	0.00	0
		Beef								
			0-12 month replacements	2,355	58.76	2,459	61.35	673	16.79	809
			12-24 month replacements**	1,265	90.24	1,542	110.05	361	25.78	507
			Mature Cows	7,000	532.00	7,600	577.60	2,000	152.00	2,500
			Bulls #	414	45.58	447	49.18	118	13.02	147
			Steers ##	2,377	261.46	2,571	282.76	679	74.70	846
		Buffalo		400	44.00	400	44.00	0	0.00	0
		Sheep		7,900	69.52	6,300	55.44	1,000	8.80	700
		Goats ^		17	0.09	13	0.07	6	0.03	4
		Swine		257	0.42	252	0.42	86	0.14	72
		Horses ^^		271	5.36	219	4.34	90	1.79	63
		Mules/Asses ^^^		4	0.11	4	0.09	1	0.04	1
		Big Game @			326.83		238.39		0.00	
		Total	1990 County Totals		1,477.41				301.88	
			1993 County Totals				1,423.68			

Table D-2 Methane Emissions from Domesticated Animals - by County (continued)

Livestock/Products (million $) 1990	1993	Average Animal Population (head)		Davis 1990	Emissions Tons	1993	Emissions Tons	Duchesne 1990	Emissions Tons	1993	Emissions Tons
574.3	556.3	Cattle*		2.09%		2.07%		4.48%		4.55%	
		Dairy									
			0-12 month replacements	506	11.52	390	8.87	1,013	23.03	878	19.96
			12-24 month replacements**	975	65.62	675	45.43	1,950	131.24	1,688	113.57
			Mature Cows	1,500	196.88	1,200	157.50	3,000	393.75	2,700	354.38
		Beef									
			0-12 month replacements	1,682	41.97	2,038	50.85	8,748	218.25	10,353	258.31
			12-24 month replacements**	903	64.46	1,279	91.22	4,698	335.19	6,494	463.36
			Mature Cows	5,000	380.00	6,300	478.80	26,000	1,976.00	32,000	2,432.00
			Bulls #	296	32.55	371	40.76	1,539	169.28	1,882	207.06
			Steers ##	1,698	186.76	2,131	234.40	8,829	971.15	10,824	1,190.59
		Buffalo		550	60.50	550	60.50	0	0.00	0	0.00
		Sheep		14,000	123.20	14,000	123.20	14,000	123.20	11,600	102.08
		Goats ^		44	0.24	44	0.24	95	0.52	97	0.53
		Swine		690	1.14	828	1.37	1,478	2.44	1,820	3.00
		Horses ^^		725	14.36	720	14.25	1,555	30.78	1,582	31.33
		Mules/Asses ^^^		12	0.28	12	0.28	25	0.61	26	0.62
		Big Game @			0.00		0.00		326.83		238.39
		Total	1990 County Totals		1,214.87				4,843.35		
			1993 County Totals				1,307.69				5,415.18

Table D-2 Methane Emissions from Domesticated Animals - by County (continued)

Livestock/Products (million $) 1990	1993	Average Animal Population (head)		Emery 1990	Emissions Tons	1993	Emissions Tons	Garfield 1990	Emissions Tons	1993	Emissions Tons
574.3	556.3	Cattle*		1.79%		1.94%		1.38%		1.26%	
		Dairy									
			0-12 month replacements	270	6.14	195	4.44	101	2.30	3,250	73.94
			12-24 month replacements**	520	35.00	338	22.71	195	13.12	5,625	378.56
			Mature Cows	800	105.00	600	78.75	300	39.38	10,000	1,312.50
		Beef									
			0-12 month replacements	4,374	109.13	4,012	100.09	370	9.23	162	4.04
			12-24 month replacements**	2,349	167.59	2,516	179.55	199	14.18	101	7.24
			Mature Cows	13,000	988.00	12,400	942.40	1,100	83.60	499	37.92
			Bulls #	769	84.64	729	80.24	65	7.16	29	3.24
			Steers ##	4,414	485.58	4,194	461.35	374	41.09	169	18.60
		Buffalo		0	0.00	0	0.00	0	0.00	0	0.00
		Sheep		8,000	70.40	6,600	58.08	3,000	26.40	2,100	18.48
		Goats ^		38	0.21	41	0.23	29	0.16	27	0.15
		Swine		591	0.97	776	1.28	455	0.75	504	0.83
		Horses ^^		621	12.30	675	13.36	479	9.48	438	8.68
		Mules/Asses ^^^		10	0.24	11	0.27	8	0.19	7	0.17
		Big Game @			326.83		238.39		326.83		238.39
		Total	1990 County Totals		2,463.79				591.09		
			1993 County Totals				2,181.13				2,102.74

Table D-2 Methane Emissions from Domesticated Animals - by County (continued)

Livestock/Products (million $) 1990	1993	Average Animal Population (head)		Grand 1990	Emissions Tons	1993	Emissions Tons	Iron 1990	Emissions Tons	1993	Emissions Tons
574.3	556.3	Cattle*		0.40%		0.25%		2.11%		1.87%	
		Dairy									
			0-12 month replacements	0	0.00	65	1.49	405	9.21	260	5.92
			12-24 month replacements**	0	0.00	113	7.62	780	52.49	450	30.29
			Mature Cows	0	0.00	201	26.42	1,200	157.50	800	105.00
		Beef									
			0-12 month replacements	1,009	25.18	647	16.14	3,364	83.94	3,462	86.37
			12-24 month replacements**	542	38.68	406	28.96	1,807	128.92	2,171	154.93
			Mature Cows	3,000	228.00	2,000	152.00	10,000	760.00	10,700	813.20
			Bulls #	178	19.53	118	12.94	592	65.11	629	69.24
			Steers ##	1,019	112.06	676	74.41	3,396	373.52	3,619	398.10
		Buffalo		0	0.00	0	0.00	0	0.00	0	0.00
		Sheep		100	0.88	600	5.28	52,000	457.60	42,100	370.48
		Goats ^		8	0.05	5	0.03	45	0.25	40	0.22
		Swine		132	0.22	100	0.17	696	1.15	748	1.23
		Horses ^^		139	2.75	87	1.72	732	14.50	650	12.88
		Mules/Asses ^^^		2	0.05	1	0.03	12	0.29	11	0.26
		Big Game @			326.83		238.39		326.83		238.39
		Total	1990 County Totals		776.85				2,504.25		
			1993 County Totals				565.61				2,286.50

Table D-2 Methane Emissions from Domesticated Animals - by County (continued)

Livestock/Products (million $) 1990	1993	Average Animal Population (head)	Juab 1990	Juab Emissions Tons 1990	Juab 1993	Juab Emissions Tons 1993	Kane 1990	Kane Emissions Tons 1990	Kane 1993	Kane Emissions Tons 1993
574.3	556.3	Cattle*	1.06%		0.92%		0.80%		0.67%	
		Dairy								
		0-12 month replacements	68	1.54	163	3.70	34	0.77	33	0.74
		12-24 month replacements**	130	8.75	281	18.93	65	4.37	56	3.79
		Mature Cows	200	26.25	500	65.63	100	13.13	100	13.13
		Beef								
		0-12 month replacements	3,028	75.55	1,941	48.43	1,682	41.97	1,779	44.40
		12-24 month replacements**	1,626	116.03	1,218	86.88	903	64.46	1,116	79.64
		Mature Cows	9,000	684.00	6,000	456.00	5,000	380.00	5,500	418.00
		Bulls #	533	58.60	353	38.82	296	32.55	324	35.59
		Steers ##	3,056	336.17	2,029	223.24	1,698	186.76	1,860	204.63
		Buffalo	0	0.00	0	0.00	0	0.00	0	0.00
		Sheep	4,000	35.20	4,200	36.96	2,000	17.60	1,900	16.72
		Goats ^	23	0.12	20	0.11	17	0.09	14	0.08
		Swine	351	0.58	367	0.61	264	0.44	266	0.44
		Horses ^^	369	7.30	319	6.31	278	5.50	231	4.58
		Mules/Asses ^^^	6	0.14	5	0.13	4	0.11	4	0.09
		Big Game @		326.83		238.39		326.83		238.39
		Total 1990 County Totals		1,727.36				1,106.82		
		1993 County Totals				1,224.12				1,060.20

Table D-2 Methane Emissions from Domesticated Animals - by County (continued)

Livestock/Products (million $) 1990	1993	Average Animal Population (head)	Millard 1990	Millard Emissions Tons 1990	Millard 1993	Millard Emissions Tons 1993	Morgan 1990	Morgan Emissions Tons 1990	Morgan 1993	Morgan Emissions Tons 1993
574.3	556.3	Cattle*	4.95%		4.40%		1.99%		1.96%	
		Dairy								
		0-12 month replacements	844	19.20	683	15.53	506	11.52	520	11.83
		12-24 month replacements**	1,625	109.36	1,181	79.50	975	65.62	900	60.57
		Mature Cows	2,500	328.13	2,100	275.63	1,500	196.88	1,600	210.00
		Beef								
		0-12 month replacements	5,720	142.70	6,826	170.32	1,009	25.18	1,003	25.02
		12-24 month replacements**	3,072	219.16	4,282	305.52	542	38.68	629	44.89
		Mature Cows	17,000	1,292.00	21,100	1,603.60	3,000	228.00	3,100	235.60
		Bulls #	1,006	110.69	1,241	136.53	178	19.53	182	20.06
		Steers ##	5,773	634.98	7,137	785.04	1,019	112.06	1,049	115.34
		Buffalo	0	0.00	0	0.00	0	0.00	0	0.00
		Sheep	7,000	61.60	4,100	36.08	16,000	140.80	11,000	96.80
		Goats ^	105	0.58	94	0.52	42	0.23	42	0.23
		Swine	1,632	2.69	1,762	2.91	655	1.08	784	1.29
		Horses ^^	1,716	33.98	1,532	30.33	689	13.64	681	13.49
		Mules/Asses ^^^	28	0.67	25	0.60	11		11	0.27
		Big Game @		326.83		238.39		326.83		238.39
		Total 1990 County Totals		3,381.04				1,215.44		
		1993 County Totals				3,680.49				1,073.78

Table D-2 Methane Emissions from Domesticated Animals - by County (continued)

Livestock/Products (million $) 1990	1993	Average Animal Population (head)	Piute 1990	Piute Emissions Tons 1990	Piute 1993	Piute Emissions Tons 1993	Rich 1990	Rich Emissions Tons 1990	Rich 1993	Rich Emissions Tons 1993
574.3	556.3	Cattle*	1.17%		1.15%		3.01%		3.02%	
		Dairy								
		0-12 month replacements	405	9.21	553	12.57	34	0.77	33	0.74
		12-24 month replacements**	780	52.49	956	64.36	65	4.37	56	3.79
		Mature Cows	1,200	157.50	1,700	223.13	100	13.13	100	13.13
		Beef								
		0-12 month replacements	1,682	41.97	1,456	36.32	9,084	226.65	9,479	236.51
		12-24 month replacements**	903	64.46	913	65.16	4,879	348.08	5,946	424.26
		Mature Cows	5,000	380.00	4,500	342.00	27,000	2,052.00	29,300	2,226.80
		Bulls #	296	32.55	265	29.12	1,598	175.79	1,724	189.59
		Steers ##	1,698	186.76	1,522	167.43	9,132	1,004.56	9,910	1,090.13
		Buffalo	0	0.00	0	0.00	0	0.00	0	0.00
		Sheep	5,000	44.00	4,800	42.24	18,000	158.40	11,500	101.20
		Goats ^	25	0.14	24	0.13	64	0.35	64	0.35
		Swine	385	0.64	460	0.76	994	1.64	1,208	1.99
		Horses ^^	405	8.02	400	7.92	1,045	20.70	1,050	20.80
		Mules/Asses ^^^	7	0.16	7	0.16	17	0.41	17	0.41
		Big Game @		326.83		238.39		326.83		238.39
		Total 1990 County Totals		1,343.87				4,463.69		
		1993 County Totals				1,229.68				4,548.09

Table D-2 Methane Emissions from Domesticated Animals - by County (continued)

Livestock/Products (million $) 1990	1993	Average Animal Population (head)	Salt Lake 1990	Salt Lake Emissions Tons	Salt Lake 1993	Salt Lake Emissions Tons	San Juan 1990	San Juan Emissions Tons	San Juan 1993	San Juan Emissions Tons
574.3	556.3	Cattle*	4.25%		4.35%		1.43%		1.22%	
		Dairy								
		0-12 month replacements	608	13.82	943	21.44	34	0.77	33	0.74
		12-24 month replacements**	1,170	78.74	1,631	109.78	65	4.37	56	3.79
		Mature Cows	1,800	236.25	2,900	380.63	100	13.13	100	13.13
		Beef								
		0-12 month replacements	1,346	33.58	1,682	41.97	3,701	92.34	4,918	122.70
		12-24 month replacements**	723	51.57	1,055	75.30	1,988	141.81	3,085	220.09
		Mature Cows	4,000	304.00	5,200	395.20	11,000	836.00	15,200	1,155.20
		Bulls #	237	26.04	306	33.65	651	71.62	894	98.35
		Steers ##	1,358	149.41	1,759	193.47	3,735	410.87	5,141	565.53
		Buffalo	0	0.00	0	0.00	0	0.00	0	0.00
		Sheep	21,000	184.80	24,500	215.60	3,000	26.40	3,000	26.40
		Goats ^	90	0.50	93	0.51	30	0.17	26	0.14
		Swine	1,402	2.31	1,740	2.87	471	0.78	488.94	0.81
		Horses ^^	1,474	29.19	1,513	29.96	495	9.81	425	8.42
		Mules/Asses ^^^	24	0.58	25	0.60	8	0.19	7	0.17
		Big Game @		0.00		0.00		326.83		238.39
		Total 1990 County Totals		1,144.11				1,993.14		
		1993 County Totals				1,500.97				2,453.85

Table D-2 Methane Emissions from Domesticated Animals - by County (continued)

Livestock/Products (million $) 1990	1993	Average Animal Population (head)	Sanpete 1990	Sanpete Emissions Tons	Sanpete 1993	Sanpete Emissions Tons	Sevier 1990	Sevier Emissions Tons	Sevier 1993	Sevier Emissions Tons
574.3	556.3	Cattle*	12.95%		12.71%		4.27%		4.57%	
		Dairy								
		0-12 month replacements	1,958	44.53	2,015	45.84	1,350	30.71	1,430	32.53
		12-24 month replacements**	3,770	253.72	3,488	234.71	2,600	174.98	2,475	166.57
		Mature Cows	5,800	761.25	6,200	813.75	4,000	525.00	4,400	577.50
		Beef								
		0-12 month replacements	5,047	125.92	4,529	113.01	4,374	109.13	4,206	104.94
		12-24 month replacements**	2,710	193.38	2,841	202.72	2,349	167.59	2,638	188.24
		Mature Cows	15,000	1,140.00	14,000	1,064.00	13,000	988.00	13,000	988.00
		Bulls #	888	97.66	824	90.59	769	84.64	765	84.12
		Steers ##	5,093	560.28	4,735	520.88	4,414	485.58	4,397	483.68
		Buffalo	0	0.00	0	0.00	0	0.00	0	0.00
		Sheep	89,000	783.20	74,600	656.48	14,000	123.20	11,000	96.80
		Goats ^	275	1.51	271	1.49	90	0.50	97	0.53
		Swine	4,275	7.05	5,084	8.39	1,408	2.32	1,826	3.01
		Horses ^^	4,495	89.01	4,420	87.51	1,480	29.31	1,588	31.44
		Mules/Asses ^^^	73	1.76	72	1.74	24	0.58	26	0.63
		Big Game @		326.83		238.39		326.83		238.39
		Total 1990 County Totals		4,517.69				3,139.82		
		1993 County Totals				4,079.50				2,996.37

Table D-2 Methane Emissions from Domesticated Animals - by County (continued)

Livestock/Products (million $) 1990	1993	Average Animal Population (head)	Summit 1990	Summit Emissions Tons	Summit 1993	Summit Emissions Tons	Tooele 1990	Tooele Emissions Tons	Tooele 1993	Tooele Emissions Tons
574.3	556.3	Cattle*	2.86%		2.41%		1.69%		1.29%	
		Dairy								
		0-12 month replacements	709	16.12	585	13.31	34	0.77	33	0.74
		12-24 month replacements**	1,365	91.86	1,013	68.14	65	4.37	56	3.79
		Mature Cows	2,100	275.63	1,800	236.25	100	13.13	100	13.13
		Beef								
		0-12 month replacements	3,028	75.55	2,976	74.26	4,710	117.52	3,268	81.53
		12-24 month replacements**	1,626	116.03	1,867	133.21	2,530	180.49	2,050	146.25
		Mature Cows	9,000	684.00	9,200	699.20	14,000	1,064.00	10,100	767.60
		Bulls #	533	58.60	541	59.53	829	91.15	594	65.35
		Steers ##	3,056	336.17	3,112	342.29	4,754	522.93	3,416	375.78
		Buffalo	0	0.00	0	0.00	0	0.00	0	0.00
		Sheep	42,000	369.60	29,500	259.60	12,000	105.60	9,300	81.84
		Goats ^	61	0.33	51	0.28	36	0.20	28	0.15
		Swine	942	1.55	964	1.59	557	0.92	518	0.85
		Horses ^^	991	19.62	838	16.59	586	11.60	450	8.91
		Mules/Asses ^^^	16	0.39	14	0.33	9	0.23	7	0.18
		Big Game @		326.83		238.39		326.83		238.39
		Total 1990 County Totals		2,443.45				2,512.93		
		1993 County Totals				2,142.98				1,784.48

Table D-2 Methane Emissions from Domesticated Animals - by County (continued)

Livestock/Products (million $) 1990	1993	Average Animal Population (head)	Uintah 1990	Uintah Emissions Tons	Uintah 1993	Uintah Emissions Tons	Utah 1990	Utah Emissions Tons	Utah 1993	Utah Emissions Tons
574.3	556.3	Cattle*	3.47%		3.49%		9.93%		10.52%	
		Dairy								
		0-12 month replacements	439	9.98	553	12.57	2,869	65.26	2,535	57.67
		12-24 month replacements**	845	56.87	956	64.36	5,525	371.83	4,388	295.28
		Mature Cows	1,300	170.63	1,700	223.13	8,500	1115.63	7,800	1023.75
		Beef								
		0-12 month replacements	8,075	201.47	7,182	179.20	5,383	134.31	6,115	152.56
		12-24 month replacements**	4,336	309.41	4,505	321.45	2,891	206.27	3,836	273.67
		Mature Cows	24,000	1824.00	22,200	1687.20	16,000	1216.00	18,900	1436.40
		Bulls #	1,421	156.26	1,306	143.65	947	104.17	1,112	122.29
		Steers ##	8,150	896.45	7,509	825.97	5,433	597.63	6,393	703.19
		Buffalo	0	0.00	0	0.00	0	0.00	0	0.00
		Sheep	23,000	202.40	18,200	160.16	41,000	360.80	46,100	405.68
		Goats ^	73	0.40	74	0.41	210	1.16	224	1.23
		Swine	1,143	1.89	1,395	2.30	3,275	5.40	4,206	6.94
		Horses ^^	1,202	23.81	1,213	24.01	3,444	68.19	3,657	72.41
		Mules/Asses ^^^	19	0.47	20	0.48	56	1.35	59	1.44
		Big Game @		326.83		238.39		0.00		0.00
		Total 1990 County Totals		4,306.28				4,375.45		
		1993 County Totals				3,883.27				4,552.52

Table D-2 Methane Emissions from Domesticated Animals - by County (continued)

Livestock/Products (million $) 1990	1993	Average Animal Population (head)	Wasatch 1990	Wasatch Emissions Tons	Wasatch 1993	Wasatch Emissions Tons	Washington 1990	Washington Emissions Tons	Washington 1993	Washington Emissions Tons
574.3	556.3	Cattle*	1.65%		1.71%		1.24%		1.24%	
		Dairy								
		0-12 month replacements	911	20.73	650	14.79	34	0.77	33	0.74
		12-24 month replacements**	1,755	118.11	1,125	75.71	65	4.37	56	3.79
		Mature Cows	2,700	354.38	2,000	262.50	100	13.13	100	13.13
		Beef								
		0-12 month replacements	1,009	25.18	1,262	31.48	3,028	75.55	3,171	79.11
		12-24 month replacements**	542	38.68	791	56.47	1,626	116.03	1,989	141.90
		Mature Cows	3,000	228.00	3,900	296.40	9,000	684.00	9,800	744.80
		Bulls #	178	19.53	229	25.24	533	58.60	576	63.41
		Steers ##	1,019	112.06	1,319	145.10	3,056	336.17	3,315	364.62
		Buffalo	0	0.00	0	0.00	0	0.00	0	0.00
		Sheep	15,000	132.00	12,500	110.00	1,000	8.80	499	4.39
		Goats ^	35	0.19	36	0.20	26	0.14	26	0.15
		Swine	546	0.90	683	1.13	408	0.67	496	0.82
		Horses ^^	574	11.37	594	11.76	429	8.49	431	8.54
		Mules/Asses ^^^	9	0.22	10	0.23	7	0.17	7	0.17
		Big Game @		326.83		238.39		326.83		238.39
		Total 1990 County Totals		1,429.82				1,682.73		
		1993 County Totals				1,269.40				1,663.94

Table D-2 Methane Emissions from Domesticated Animals - by County (continued)

Livestock/Products (million $) 1990	1993	Average Animal Population (head)	Wayne 1990	Wayne Emissions Tons	Wayne 1993	Wayne Emissions Tons	Weber 1990	Weber Emissions Tons	Weber 1993	Weber Emissions Tons
574.3	556.3	Cattle*	1.57%		1.55%		4.34%		4.28%	
		Dairy								
		0-12 month replacements	371	8.45	195	4.44	2,363	53.75	2,275	51.76
		12-24 month replacements**	715	48.12	338	22.71	4,550	306.22	3,938	264.99
		Mature Cows	1,100	144.38	600	78.75	7,000	918.75	7,000	918.75
		Beef								
		0-12 month replacements	3,701	92.34	3,171	79.11	1,346	33.58	2,265	56.50
		12-24 month replacements**	1,988	141.81	1,989	141.90	723	51.57	1,421	101.36
		Mature Cows	11,000	836.00	9,800	744.80	4,000	304.00	7,000	532.00
		Bulls #	651	71.62	576	63.41	237	26.04	412	45.29
		Steers ##	3,735	410.87	3,315	364.62	1,358	149.41	2,368	260.44
		Buffalo	0	0.00	0	0.00	0	0.00	0	0.00
		Sheep	12,000	105.60	8,300	73.04	7,000	61.60	8,900	78.32
		Goats ^	33	0.18	33	0.18	92	0.51	91	0.50
		Swine	517	0.85	618	1.02	1,431	2.36	1,711	2.82
		Horses ^^	544	10.77	538	10.65	1,504	29.79	1,488	29.46
		Mules/Asses ^^^	9	0.21	9	0.21	24	0.59	24	0.59
		Big Game @		326.83		238.39		0.00		0.00
		Total 1990 County Totals		2,263.97				1,996.30		
		1993 County Totals				1,823.23				2,413.07

Table D-2 notes:

* Beginning 1/1/71, Utah classification estimates for Cattle were changed from sex and age to sex and weight.

** Heifers 500 lbs and over are assumed to be at least 12 months old, and will be categorized as 12-24 month replacements.

\# Bulls 500 lbs and over are categorized only as Beef Cattle.

\#\# Steers 500 lbs and over are added to the Bulls category for Beef Cattle.
Steers, Heifers, and Bulls under 500 lbs are assumed to be less than 12 months old,
and are ratioed to the Beef and Dairy 0-12 month replacements category based on the total beef cows and dairy cows for 1/1/91.

^ 1993 Goat populations are based on a 1992 Deparment of Agriculture census.

^^ 1993 Horse populations are based on a 1992 Deparment of Agriculture census. Category includes ponies.

^^ 1993 Mules/Asses populations are based on a 1992 Deparment of Agriculture census. Category includes Mules, Burros, Donkeys.
There is an estimated 0.48% overall average livestock population increase from 1990 to 1993. This was used to back-calculate estimated 1990 populations for the Goats, Horses, and Mules/Asses categories.
As only selected items were provided in the Enterprise Budgets reports (in bold), remaining Cattle categories were estimated as a percentage of each county's reported share of the Dairy and Beef Cattle categories; other categories were estimated based on each county's reported share of the Annual Livestock Cash Receipts.

@ Big Game animals include: moose, elk, mule deer, antelope, bighorn sheep, and mountain goats. Populations were distributed equally among all counties, except for Davis, Salt Lake, Utah, and Weber - where the greatest human populations reside.
To adjust for estimating animal populations in each county, and the resulting discrepancies in emission totals between the Statewide totals and the County grand total, each county total was normalized against the Statewide total for each year.

Appendix E

Methane from Manure Management

Table E-1 Methane Emissions from Manure Management: 1990

		Type	Populations: 1990	Emissions (tons)	Beaver Emissions (tons)	Box Elder Emissions (tons)	Cache Emissions (tons)	Carbon Emissions (tons)
					% of State Cash Value = 2.70	% of State Cash Value =8.41%	% of State Cash Value = 13.01	% of State Cash Value = .78%
Cattle								
	Beef	Steers	109,000	17.13	0.46	1.44	2.23	0.13
		Heifers*	58,000	9.11	0.25	0.77	1.19	0.07
		Calves**	108,000	8.48	0.23	0.71	1.10	0.07
		Cows	321,000	70.00	1.89	5.89	9.11	0.55
		Bulls	19,000	5.97	0.16	0.50	0.78	0.05
		Beef Totals	615000	110.69	2.99	9.31	14.40	0.86
	Dairy	Heifers***	79,000	241.78	6.53	20.33	31.46	1.89
		Cows	80,000	364.68	9.85	30.67	47.45	2.84
		Dairy Totals	159000	606.46	16.37	51.00	78.90	4.73
Swine^		Market	28,000	923.56	24.94	77.67	120.16	7.20
		Breeding	5,000	499.24	13.48	41.99	64.95	3.89
		Swine Totals	33000	1422.80	38.42	119.66	185.11	11.10
Poultry^		Layers	1,817,000	340.56	9.20	28.64	44.31	2.66
		Broilers	1,190,000	109.92	2.97	9.24	14.30	0.86
		Ducks	n/a	0.00	0.00	0.00	0.00	0.00
		Turkeys	3,930,000	8.75	0.24	0.74	1.14	0.07
		Poultry Totals	6937000	459.24	12.40	38.62	59.75	3.58
Other Animals		Sheep	509,000	14.14	0.38	1.19	1.84	0.11
		Goats	2,120	0.05	0.00	0.00	0.01	0.00
		Mules/Asses^	560	0.13	0.00	0.01	0.02	0.00
		Horses^^	34,700	12.35	0.33	1.04	1.61	0.10
		Emission Totals		2,625.86	70.90	220.83	341.62	20.48

Table E-1 Methane Emissions from Manure Management: 1990 (continued)

		Type	Daggett Emissions (tons)	Davis Emissions (tons)	Duchesne Emissions (tons)	Emery Emissions (tons)	Garfield Emissions (tons)	Grand Emissions (tons)
			% of State Cash Value = .26%	% of State Cash Value = 2.09	% of State Cash Value =4.48%	% of State Cash Value =1.79%	% of State Cash Value =1.38%	% of State Cash Value =.40%
Cattle								
	Beef	Steers	0.04	0.36	0.77	0.31	0.24	0.07
		Heifers*	0.02	0.19	0.41	0.16	0.13	0.04
		Calves**	0.02	0.18	0.38	0.15	0.12	0.03
		Cows	0.18	1.46	3.14	1.25	0.97	0.28
		Bulls	0.02	0.12	0.27	0.11	0.08	0.02
		Beef Totals	0.29	2.31	4.96	1.98	1.53	0.44
	Dairy	Heifers***	0.63	5.05	10.83	4.33	3.34	0.97
		Cows	0.95	7.62	16.34	6.53	5.03	1.46
		Dairy Totals	1.58	12.67	27.17	10.86	8.37	2.43
Swine^		Market	2.40	19.30	41.38	16.53	12.75	3.69
		Breeding	1.30	10.43	22.37	8.94	6.89	2.00
		Swine Totals	3.70	29.74	63.74	25.47	19.63	5.69
Poultry^		Layers	0.89	7.12	15.26	6.10	4.70	1.36
		Broilers	0.29	2.30	4.92	1.97	1.52	0.44
		Ducks	0.00	0.00	0.00	0.00	0.00	0.00
		Turkeys	0.02	0.18	0.39	0.16	0.12	0.03
		Poultry Totals	1.19	9.60	20.57	8.22	6.34	1.84
Other Animals		Sheep	0.04	0.30	0.63	0.25	0.20	0.06
		Goats	0.00	0.00	0.00	0.00	0.00	0.00
		Mules/Asses^	0.00	0.00	0.01	0.00	0.00	0.00
		Horses^^	0.03	0.26	0.55	0.22	0.17	0.05
		Emission Totals	6.83	54.88	117.64	47.00	36.24	10.50

Table E-1 Methane Emissions from Manure Management: 1990 (continued)

		Type	Iron Emissions (tons) % of State Cash Value =2.11%	Juab Emissions (tons) % of State Cash Value =1.06%	Kane Emissions (tons) % of State Cash Value =.80%	Millard Emissions (tons) % of State Cash Value = 4.95	Morgan Emissions (tons) % of State Cash Value = 1.99	Piute Emissions (tons) % of State Cash Value = 1.17
Cattle								
	Beef	Steers	0.36	0.18	0.14	0.85	0.34	0.20
		Heifers*	0.19	0.10	0.07	0.45	0.18	0.11
		Calves**	0.18	0.09	0.07	0.42	0.17	0.10
		Cows	1.48	0.74	0.56	3.46	1.39	0.82
		Bulls	0.13	0.06	0.05	0.30	0.12	0.07
		Beef Totals	2.34	1.17	0.89	5.48	2.20	1.30
	Dairy	Heifers***	5.10	2.56	1.93	11.97	4.81	2.83
		Cows	7.69	3.87	2.92	18.05	7.26	4.27
		Dairy Totals	12.80	6.43	4.85	30.02	12.07	7.10
Swine^		Market	19.49	9.79	7.39	45.72	18.38	10.81
		Breeding	10.53	5.29	3.99	24.71	9.93	5.84
		Swine Totals	30.02	15.08	11.38	70.43	28.31	16.65
Poultry^		Layers	7.19	3.61	2.72	16.86	6.78	3.98
		Broilers	2.32	1.17	0.88	5.44	2.19	1.29
		Ducks	0.00	0.00	0.00	0.00	0.00	0.00
		Turkeys	0.18	0.09	0.07	0.43	0.17	0.10
		Poultry Totals	9.69	4.87	3.67	22.73	9.14	5.37
Other Animals		Sheep	0.30	0.15	0.11	0.70	0.28	0.17
		Goats	0.00	0.00	0.00	0.00	0.00	0.00
		Mules/Asses^	0.00	0.00	0.00	0.01	0.00	0.00
		Horses^^	0.26	0.13	0.10	0.61	0.25	0.14
		Emission Totals	55.41	27.83	21.01	129.98	52.25	30.72

Table E-1 Methane Emissions from Manure Management: 1990 (continued)

		Type	Rich Emissions (tons) % of State Cash Value =3.01%	Salt Lake Emissions (tons) % of State Cash Value = 4.25	San Juan Emissions (tons) % of State Cash Value = 1.43	Sanpete Emissions (tons) % of State Cash Value = 12.95	Sevier Emissions (tons) % of State Cash Value = 4.27	Summit Emissions (tons) % of State Cash Value = 2.86
Cattle								
	Beef	Steers	0.52	0.73	0.24	2.22	0.73	0.49
		Heifers*	0.27	0.39	0.13	1.18	0.39	0.26
		Calves**	0.26	0.36	0.12	1.10	0.36	0.24
		Cows	2.11	f	1.00	9.06	2.99	2.00
		Bulls	0.18	0.25	0.09	0.77	0.25	0.17
		Beef Totals	3.33	1.73	1.58	14.33	4.73	3.17
	Dairy	Heifers***	7.28	10.28	3.46	31.31	10.28	6.91
		Cows	10.98	15.50	5.21	47.23	15.50	10.43
		Dairy Totals	18.25	25.77	8.67	78.54	25.77	17.34
Swine^		Market	27.80	39.25	13.21	119.60	39.25	26.41
		Breeding	15.03	21.22	7.14	64.65	21.22	14.28
		Swine Totals	42.83	60.47	20.35	184.25	60.47	40.69
Poultry^		Layers	10.25	14.47	4.87	44.10	14.47	9.74
		Broilers	3.31	4.67	1.57	14.24	4.67	3.14
		Ducks	0.00	0.00	0.00	0.00	0.00	0.00
		Turkeys	0.26	0.37	0.13	1.13	0.37	0.25
		Poultry Totals	13.82	19.52	6.57	59.47	19.52	13.13
Other Animals		Sheep	0.43	0.60	0.20	1.83	0.60	0.40
		Goats	0.00	0.00	0.00	0.01	0.00	0.00
		Mules/Asses^	0.00	0.01	0.00	0.02	0.01	0.00
		Horses^^	0.37	0.52	0.18	1.60	0.52	0.35
		Emission Totals	79.04	108.62	37.55	340.05	111.62	75.10

Table E-1 Methane Emissions from Manure Management: 1990 (continued)

Type			Tooele Emissions (tons)	Uintah Emissions (tons)	Utah Emissions (tons)	Wasatch Emissions (tons)	Washington Emissions (tons)	Wayne Emissions (tons)	Weber Emissions (tons)
			% of State Cash Value = 1.69%	% of State Cash Value = 3.47%	% of State Cash Value = 9.93%	% of State Cash Value = 1.65%	% of State Cash Value = 1.24%	% of State Cash Value = 1.57%	% of State Cash Value = 4.34%
Cattle									
	Beef	Steers	0.29	0.59	1.70	0.28	0.21	0.27	0.74
		Heifers*	0.15	0.32	0.90	0.15	0.11	0.14	0.40
		Calves**	0.14	0.29	0.84	0.14	0.11	0.13	0.37
		Cows	1.18	2.43	6.95	1.15	0.87	1.10	3.04
		Bulls	0.10	0.21	0.59	0.10	0.07	0.09	0.26
		Beef Totals	**1.87**	**3.84**	**10.99**	**1.83**	**1.37**	**1.74**	**4.80**
	Dairy	Heifers***	4.09	8.39	24.01	3.99	3.00	3.80	10.49
		Cows	6.16	12.65	36.21	6.02	4.52	5.73	15.83
		Dairy Totals	**10.25**	**21.04**	**60.22**	**10.01**	**7.52**	**9.52**	**26.32**
Swine^		Market	15.61	32.05	91.71	15.24	11.45	14.50	40.08
		Breeding	8.44	17.32	49.57	8.24	6.19	7.84	21.67
		Swine Totals	**24.05**	**49.37**	**141.28**	**23.48**	**17.64**	**22.34**	**61.75**
Poultry^		Layers	5.76	11.82	33.82	5.62	4.22	5.35	14.78
		Broilers	1.86	3.81	10.92	1.81	1.36	1.73	4.77
		Ducks	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Turkeys	0.15	0.30	0.87	0.14	0.11	0.14	0.38
		Poultry Totals	**7.76**	**15.94**	**45.60**	**7.58**	**5.69**	**7.21**	**19.93**
Other Animals		Sheep	0.24	0.49	1.40	0.23	0.18	0.22	0.61
		Goats	0.00	0.00	0.01	0.00	0.00	0.00	0.00
		Mules/Asses^	0.00	0.00	0.01	0.00	0.00	0.00	0.01
		Horses^^	0.21	0.43	1.23	0.20	0.15	0.19	0.54
		Emission Totals	**44.38**	**91.12**	**260.75**	**43.33**	**32.56**	**41.23**	**113.96**

^ The category of Mules/Asses was retained from the Domestic Animals section, including Donkeys, to make use of the already calculated populations.
^^ Horses were left as a separate category, like Mules/Asses, to make use of the already calculated populations.
Both the Mules/Asses and Horses categories used the default manure management system for Horses.

Table E-2 1990 Maximum Potential Emissions

	Type	Populations: 1990	Typical Animal Mass (lbs/head)	Volatile Solids (VS) (lbs VS/lb mass)	Total Volatile Solids Produced (lbs)	Methane (CH4) Producing Capacity (Bo) (cu ft/lbs VS)	Maximum Potential Emission (cubic feet)
Cattle							
	Beef Steers	109,000	794	2.6	225,019,600	2.72	612,053,312
	Heifers*	58,000	794	2.6	119,735,200	2.72	325,679,744
	Calves**	108,000	397	2.6	111,477,600	2.72	303,219,072
	Cows	321,000	1102	2.6	919,729,200	2.72	2,501,663,424
	Bulls	19,000	1587	2.6	78,397,800	2.72	213,242,016
	Dairy Heifers***	79,000	903	3.65	260,380,050	3.84	999,859,392
	Cows	80,000	1345	3.65	392,740,000	3.84	1,508,121,600
Swine	Market	28,000	101	3.1	8,766,800	7.53	66,014,004
	Breeding	5,000	399	3.1	6,184,500	5.77	35,684,565
Poultry	Layers	1,817,000	3.5	4.4	60,522,000	5.45	329,844,900
	Broilers	1,190,000	1.5	6.2	11,067,000	4.81	53,232,270
	Ducks	n/a	3.1	6.75	0	5.13	0
	Turkeys	3,930,000	7.5	3.32	97,857,000	4.81	470,692,170
Other Animals							
	Sheep	509,000	154	3.36	263,376,960	3.04	800,665,958
	Goats	2,120	141	3.48	1,040,242	2.72	2,829,457
	Mules/Asses^	560	661	3.65	1,351,084	5.29	7,147,234
	Horses^^	34,700	992	3.65	125,641,760	5.29	664,644,910

Table E-3 1990 Methane Emissions from Manure Management

Animal Category	CH4 (lbs/yr)	CH4 (tons/yr)		
Dairy Cattle	1,212,917.29	606.46	23.10%	
Beef Cattle	221,375.72	110.69	4.22%	5.23%
Swine	2,845,602.23	1,422.80	54.18%	
Poultry	918,474.62	459.24	17.49%	
Sheep	28,272.72	14.14	0.54%	
Goats	105.17	0.05	0.00%	
Mules/Asses	265.66	0.13	0.01%	
Horses	24,704.85	12.35	0.47%	
	5,251,718.27	2,625.86	100.00%	

Table E-4 1990 Methane Emissions by Animal Type

Utah Methane Convergence Factor (MCF) (%)	Manure System	Utah Waste System Useage (WS%) (%) Beef	Dairy	Swine	Poultry-Layers	Poultry-Broiler	Poultry-Turkeys	Sheep	Goats	Horses
0.09%	Pasture/Range	95.00%					100.00%	95.00%	100.00%	80.00%
0.20%	Daily Spread		8.00%							
0.09%	Solid Storage		90.00%							
1.00%	Drylot	5.00%		25.00%						
10.00%	Deep Pit Stacks				50.00%					
10.00%	Litter					100.00%	0.00%			
0.09%	Paddock									20.00%
17.40%	Liquid/Slurry	0.00%	1.00%		0.00%					
90.00%	Anaerobic Lagoon	0.00%	1.00%	75.00%	0.00%					
8.70%	Pit Storage < 1 month			0.00%						
17.40%	Pit Storage > 1 month			0.00%						
	Other	0.00%	0.00%	0.00%	50.00%		0.00%	5.00%	0.00%	0.00%
		100.00%	100.00%	100.00%	100.00%		100.00%	100.00%	100.00%	100.00%

Beef Steers	Manure System	Methane Emissions (Cubic Feet)	Methane Emissions (lbs)
	Pasture/Range	523,305.58	21,612.52
	Daily Spread	0.00	0.00
	Solid Storage	0.00	0.00
	Drylot	306,026.66	12,638.90
	Deep Pit Stacks	0.00	0.00
	Litter	0.00	0.00
	Paddock	0.00	0.00
	Liquid/Slurry	0.00	0.00
	Anaerobic Lagoon	0.00	0.00
	Pit Storage < 1 month	0.00	0.00
	Pit Storage > 1 month	0.00	0.00
		Total	34,251.42

Beef Heifers	Manure System	Methane Emission (Cubic Feet)	Methane Emissions (lbs)
	Pasture/Range	278,456.18	11,500.24
	Daily Spread	0.00	0.00
	Solid Storage	0.00	0.00
	Drylot	162,839.87	6,725.29
	Deep Pit Stacks	0.00	0.00
	Litter	0.00	0.00
	Paddock	0.00	0.00
	Liquid/Slurry	0.00	0.00
	Anaerobic Lagoo	0.00	0.00
	Pit Storage < 1 m	0.00	0.00
	Pit Storage > 1 m	0.00	0.00
		Total	18,225.53

Dairy Heifers	Manure System	Methane Emissions (Cubic Feet)	Methane Emissions (lbs)
	Pasture/Range	0.00	0.00
	Daily Spread	159,977.50	6,607.07
	Solid Storage	809,886.11	33,448.30
	Drylot	0.00	0.00
	Deep Pit Stacks	0.00	0.00
	Litter	0.00	0.00
	Paddock	0.00	0.00
	Liquid/Slurry	1,739,755.34	71,851.90
	Anaerobic Lagoon	8,998,734.53	371,647.74
	Pit Storage < 1 month	0.00	0.00
	Pit Storage > 1 month	0.00	0.00
		Total	483,555.00

Dairy Cows	Manure System	Methane Emission (Cubic Feet)	Methane Emissions (lbs)
	Pasture/Range	0.00	0.00
	Daily Spread	241,299.46	9,965.67
	Solid Storage	1,221,578.50	50,451.19
	Drylot	0.00	0.00
	Deep Pit Stacks	0.00	0.00
	Litter	0.00	0.00
	Paddock	0.00	0.00
	Liquid/Slurry	2,624,131.58	108,376.63
	Anaerobic Lagoo	13,573,094.40	560,568.80
	Pit Storage < 1 m	0.00	0.00
	Pit Storage > 1 m	0.00	0.00
		Total	729,362.29

Table E-4 1990 Methane Emissions by Animal Type (continued)

Swine Market	Manure System	Methane Emissions (Cubic Feet)	Methane Emissions (lbs)
	Pasture/Range	0.00	0.00
	Daily Spread	0.00	0.00
	Solid Storage	0.00	0.00
	Drylot	165,035.01	6,815.95
	Deep Pit Stacks	0.00	0.00
	Litter	0.00	0.00
	Paddock	0.00	0.00
	Liquid/Slurry	0.00	0.00
	Anaerobic Lagoon	44,559,452.70	1,840,305.40
	Pit Storage < 1 month	0.00	0.00
	Pit Storage > 1 month	0.00	0.00
		Total	1,847,121.34

Swine Breeding	Manure System	Methane Emissions (Cubic Feet)	Methane Emission (lbs)
	Pasture/Range	0.00	0.00
	Daily Spread	0.00	0.00
	Solid Storage	0.00	0.00
	Drylot	89,211.41	3,684.43
	Deep Pit Stacks	0.00	0.00
	Litter	0.00	0.00
	Paddock	0.00	0.00
	Liquid/Slurry	0.00	0.00
	Anaerobic Lagoo	24,087,081.38	994,796.46
	Pit Storage < 1	0.00	0.00
	Pit Storage > 1	0.00	0.00
		Total	998,480.89

Poultry Layers	Manure System	Methane Emissions (Cubic Feet)	Methane Emissions (lbs)
	Pasture/Range	0.00	0.00
	Daily Spread	0.00	0.00
	Solid Storage	0.00	0.00
	Drylot	0.00	0.00
	Deep Pit Stacks	16,492,245.00	681,129.72
	Litter	0.00	0.00
	Paddock	0.00	0.00
	Liquid/Slurry	0.00	0.00
	Anaerobic Lagoon	0.00	0.00
	Pit Storage < 1 month	0.00	0.00
	Pit Storage > 1 month	0.00	0.00
		Total	681,129.72

Poultry Broilers	Manure System	Methane Emissions (Cubic Feet)	Methane Emission (lbs)
	Pasture/Range	0.00	0.00
	Daily Spread	0.00	0.00
	Solid Storage	0.00	0.00
	Drylot	0.00	0.00
	Deep Pit Stacks	0.00	0.00
	Litter	5,323,227.00	219,849.28
	Paddock	0.00	0.00
	Liquid/Slurry	0.00	0.00
	Anaerobic Lagoo	0.00	0.00
	Pit Storage < 1	0.00	0.00
	Pit Storage > 1	0.00	0.00
		Total	219,849.28

Other Animals Sheep	Manure System	Methane Emissions (Cubic Feet)	Methane Emissions (lbs)
	Pasture/Range	684,569.39	28,272.72
	Daily Spread	0.00	0.00
	Solid Storage	0.00	0.00
	Drylot	0.00	0.00
	Deep Pit Stacks	0.00	0.00
	Litter	0.00	0.00
	Paddock	0.00	0.00
	Liquid/Slurry	0.00	0.00
	Anaerobic Lagoon	0.00	0.00
	Pit Storage < 1 month	0.00	0.00
	Pit Storage > 1 month	0.00	0.00
		Total	28,272.72

Other Animals Goats	Manure System	Methane Emissions (Cubic Feet)	Methane Emission (lbs)
	Pasture/Range	2,546.51	105.17
	Daily Spread	0.00	0.00
	Solid Storage	0.00	0.00
	Drylot	0.00	0.00
	Deep Pit Stacks	0.00	0.00
	Litter	0.00	0.00
	Paddock	0.00	0.00
	Liquid/Slurry	0.00	0.00
	Anaerobic Lagoo	0.00	0.00
	Pit Storage < 1	0.00	0.00
	Pit Storage > 1	0.00	0.00
		Total	105.17

Table E-4 1990 Methane Emissions by Animal Type (continued)

Beef Calves	Manure System	Methane Emission (Cubic Feet)	Methane Emissions (lbs)
	Pasture/Range	259,252.31	10,707.12
	Daily Spread	0.00	0.00
	Solid Storage	0.00	0.00
	Drylot	151,609.54	6,261.47
	Deep Pit Stacks	0.00	0.00
	Litter	0.00	0.00
	Paddock	0.00	0.00
	Liquid/Slurry	0.00	0.00
	Anaerobic Lagoon	0.00	0.00
	Pit Storage < 1 month	0.00	0.00
	Pit Storage > 1 month	0.00	0.00
		Total	16,968.59

Beef Cows	Manure System	Methane Emissions (Cubic Feet)	Methane Emissions (lbs)
	Pasture/Range	2,138,922.23	88,337.49
	Daily Spread	0.00	0.00
	Solid Storage	0.00	0.00
	Drylot	1,250,831.71	51,659.35
	Deep Pit Stacks	0.00	0.00
	Litter	0.00	0.00
	Paddock	0.00	0.00
	Liquid/Slurry	0.00	0.00
	Anaerobic Lagoon	0.00	0.00
	Pit Storage < 1 mont	0.00	0.00
	Pit Storage > 1 mont	0.00	0.00
		Total	139,996.84

Beef Bulls	Manure System	Methane Emission (Cubic Feet)	Methane Emissions (lbs)
	Pasture/Range	182,321.92	7,529.90
	Daily Spread	0.00	0.00
	Solid Storage	0.00	0.00
	Drylot	106,621.01	4,403.45
	Deep Pit Stacks	0.00	0.00
	Litter	0.00	0.00
	Paddock	0.00	0.00
	Liquid/Slurry	0.00	0.00
	Anaerobic Lagoon	0.00	0.00
	Pit Storage < 1 month	0.00	0.00
	Pit Storage > 1 month	0.00	0.00
		Total	11,933.34

Poultry Turkeys	Manure System	Methane Emissions (Cubic Feet)	Methane Emissions (lbs)
	Pasture/Range	423,622.95	17,495.63
	Daily Spread	0.00	0.00
	Solid Storage	0.00	0.00
	Drylot	0.00	0.00
	Deep Pit Stacks	0.00	0.00
	Litter	0.00	0.00
	Paddock	0.00	0.00
	Liquid/Slurry	0.00	0.00
	Anaerobic Lagoon	0.00	0.00
	Pit Storage < 1 mont	0.00	0.00
	Pit Storage > 1 mont	0.00	0.00
		Total	17,495.63

Other Animals Mules/Asses	Manure System	Methane Emission (Cubic Feet)	Methane Emissions (lbs)
	Pasture/Range	5,146.01	212.53
	Daily Spread	0.00	0.00
	Solid Storage	0.00	0.00
	Drylot	0.00	0.00
	Deep Pit Stacks	0.00	0.00
	Litter	0.00	0.00
	Paddock	1,286.50	53.13
	Liquid/Slurry	0.00	0.00
	Anaerobic Lagoon	0.00	0.00
	Pit Storage < 1 month	0.00	0.00
	Pit Storage > 1 month	0.00	0.00
		Total	265.66

Other Animals Horses	Manure System	Methane Emissions (Cubic Feet)	Methane Emissions (lbs)
	Pasture/Range	478,544.34	19,763.88
	Daily Spread	0.00	0.00
	Solid Storage	0.00	0.00
	Drylot	0.00	0.00
	Deep Pit Stacks	0.00	0.00
	Litter	0.00	0.00
	Paddock	119,636.08	4,940.97
	Liquid/Slurry	0.00	0.00
	Anaerobic Lagoon	0.00	0.00
	Pit Storage < 1 mont	0.00	0.00
	Pit Storage > 1 mont	0.00	0.00
		Total	24,704.85

Table E-5 Methane Emissions from Manure Management: 1993

		Type	Populations: 1993	Emissions (tons)	Beaver Emissions (tons) % of State Cash Value = 3.20	Box Elder Emissions (tons) % of State Cash Value = 8.25	Cache Emissions (tons) % of State Cash Value = 14.36	Carbon Emissions (tons) % of State Cash Value = .63%
Cattle								
	Beef	Steers	115,000	18.07	0.58	1.49	2.59	0.11
		Heifers*	69,000	10.84	0.35	0.89	1.56	0.07
		Calves**	110,000	8.64	0.28	0.71	1.24	0.05
		Cows	340,000	74.14	2.37	6.12	10.65	0.47
		Bulls	20,000	6.28	0.20	0.52	0.90	0.04
		Total Beef	654000	117.97	3.78	9.73	16.94	0.74
	Dairy	Heifers***	71,000	217.29	6.95	17.93	31.20	1.37
		Cows	80,000	364.68	11.67	30.09	52.37	2.30
		Total Dairy	151000	581.97	18.62	48.01	83.57	3.67
Swine^		Market	35,000	1,154.45	36.94	95.24	165.78	7.27
		Breeding	5,000	499.24	15.98	41.19	71.69	3.15
		Total Swine	40000	1653.69	52.92	136.43	237.47	10.42
Poultry^		Layers	1,880,000	333.63	10.68	27.52	47.91	2.10
		Broilers	1,210,000	111.77	3.58	9.22	16.05	0.70
		Ducks	n/a		0.00	0.00	0.00	0.00
		Turkeys	3,850,000	8.57	0.27	0.71	1.23	0.05
		Total Poultry	6940000	453.97	14.53	37.45	65.19	2.86
Other Animals		Sheep	440,000	12.22	0.39	1.01	1.75	0.08
		Goats	2,129	0.05	0.00	0.00	0.01	0.00
		Mules/Asses^	565	0.13	0.00	0.01	0.02	0.00
		Horses^^	34,778	12.38	0.40	1.02	1.78	0.08
		Total Emissions		2,832.40	90.64	233.67	406.73	17.84

Table E-5 Methane Emissions from Manure Management: 1993 (continued)

		Type	Daggett Emissions (tons) % of State Cash Value = .18%	Davis Emissions (tons) % of State Cash Value = 2.07	Duchesne Emissions (tons) % of State Cash Value = 4.55	Emery Emissions (tons) % of State Cash Value = 1.94	Garfield Emissions (tons) % of State Cash Value = 1.26%	Grand Emissions (tons) % of State Cash Value = .25%
Cattle								
	Beef	Steers	0.03	0.37	0.82	0.35	0.23	0.05
		Heifers*	0.02	0.22	0.49	0.21	0.14	0.03
		Calves**	0.02	0.18	0.39	0.17	0.11	0.02
		Cows	0.13	1.53	3.37	1.44	0.93	0.19
		Bulls	0.01	0.13	0.29	0.12	0.08	0.02
		Total Beef	0.21	2.44	5.37	2.29	1.49	0.29
	Dairy	Heifers***	0.39	4.50	9.89	4.22	2.74	0.54
		Cows	0.66	7.55	16.59	7.07	4.59	0.91
		Total Dairy	1.05	12.05	26.48	11.29	7.33	1.45
Swine^		Market	2.08	23.90	52.53	22.40	14.55	2.89
		Breeding	0.90	10.33	22.72	9.69	6.29	1.25
		Total Swine	2.98	34.23	75.24	32.08	20.84	4.13
Poultry^		Layers	0.60	6.91	15.18	6.47	4.20	0.83
		Broilers	0.20	2.31	5.09	2.17	1.41	0.28
		Ducks	0.00	0.00	0.00	0.00	0.00	0.00
		Turkeys	0.02	0.18	0.39	0.17	0.11	0.02
		Total Poultry	0.82	9.40	20.66	8.81	5.72	1.13
Other Animals		Sheep	0.02	0.25	0.56	0.24	0.15	0.03
		Goats	0.00	0.00	0.00	0.00	0.00	0.00
		Mules/Asses^	0.00	0.00	0.01	0.00	0.00	0.00
		Horses^^	0.02	0.26	0.56	0.24	0.16	0.03
		Total Emissions	5.10	58.63	128.87	54.95	35.69	7.08

Table E-5 Methane Emissions from Manure Management: 1993 (continued)

		Type	Iron Emissions (tons) % of State Cash Value = 1.87	Juab Emissions (tons) % of State Cash Value = .92%	Kane Emissions (tons) % of State Cash Value = .67%	Millard Emissions (tons) % of State Cash Value = 4.40	Morgan Emissions (tons) % of State Cash Value = 1.96	Piute Emissions (tons) % of State Cash Value = 1.15
Cattle								
	Beef	Steers	0.34	0.17	0.12	0.80	0.35	0.21
		Heifers*	0.20	0.10	0.07	0.48	0.21	0.12
		Calves**	0.16	0.08	0.06	0.38	0.17	0.10
		Cows	1.39	0.68	0.50	3.26	1.45	0.85
		Bulls	0.12	0.06	0.04	0.28	0.12	0.07
		Total Beef	2.21	1.09	0.79	5.19	2.31	1.36
	Dairy	Heifers***	4.06	2.00	1.46	9.56	4.26	2.50
		Cows	6.82	3.36	2.44	16.05	7.15	4.19
		Total Dairy	10.88	5.35	3.90	25.61	11.41	6.69
Swine^		Market	21.59	10.62	7.73	50.80	22.63	13.28
		Breeding	9.34	4.59	3.34	21.97	9.79	5.74
		Total Swine	30.92	15.21	11.08	72.76	32.41	19.02
Poultry^		Layers	6.24	3.07	2.24	14.68	6.54	3.84
		Broilers	2.09	1.03	0.75	4.92	2.19	1.29
		Ducks	0.00	0.00	0.00	0.00	0.00	0.00
		Turkeys	0.16	0.08	0.06	0.38	0.17	0.10
		Total Poultry	8.49	4.18	3.04	19.97	8.90	5.22
Other Animals		Sheep	0.23	0.11	0.08	0.54	0.24	0.14
		Goats	0.00	0.00	0.00	0.00	0.00	0.00
		Mules/Asses^	0.00	0.00	0.00	0.01	0.00	0.00
		Horses^^	0.23	0.11	0.08	0.54	0.24	0.14
		Total Emissions	52.97	26.06	18.98	124.63	55.52	32.57

Table E-5 Methane Emissions from Manure Management: 1993 (continued)

		Type	Rich Emissions (tons) % of State Cash Value = 3.02	Salt Lake Emissions (tons) % of State Cash Value = 4.35	San Juan Emissions (tons) % of State Cash Value = 1.22	Sanpete Emissions (tons) % of State Cash Value = 12.71	Sevier Emissions (tons) % of State Cash Value = 4.57	Summit Emissions (tons) % of State Cash Value = 2.41
Cattle								
	Beef	Steers	0.55	0.79	0.22	2.30	0.83	0.44
		Heifers*	0.33	0.47	0.13	1.38	0.50	0.26
		Calves**	0.26	0.38	0.11	1.10	0.39	0.21
		Cows	2.24	3.23	0.90	9.42	3.39	1.79
		Bulls	0.19	0.27	0.08	0.80	0.29	0.15
		Total Beef	3.56	5.13	1.44	14.99	5.39	2.84
	Dairy	Heifers***	6.56	9.45	2.65	27.62	9.93	5.24
		Cows	11.01	15.86	4.45	46.35	16.67	8.79
		Total Dairy	17.58	25.32	7.10	73.97	26.60	14.03
Swine^		Market	34.86	50.22	14.08	146.73	52.76	27.82
		Breeding	15.08	21.72	6.09	63.45	22.82	12.03
		Total Swine	49.94	71.94	20.18	210.18	75.57	39.85
Poultry^		Layers	10.08	14.51	4.07	42.40	15.25	8.04
		Broilers	3.38	4.86	1.36	14.21	5.11	2.69
		Ducks	0.00	0.00	0.00	0.00	0.00	0.00
		Turkeys	0.26	0.37	0.10	1.09	0.39	0.21
		Total Poultry	13.71	19.75	5.54	57.70	20.75	10.94
Other Animals		Sheep	0.37	0.53	0.15	1.55	0.56	0.29
		Goats	0.00	0.00	0.00	0.01	0.00	0.00
		Mules/Asses^	0.00	0.01	0.00	0.02	0.01	0.00
		Horses^^	0.37	0.54	0.15	1.57	0.57	0.30
		Total Emissions	85.54	123.21	34.56	360.00	129.44	68.26

Table E-5 Methane Emissions from Manure Management: 1993 (continued)

		Type	Tooele Emissions (tons) % of State Cash Value = 1.29	Uintah Emissions (tons) % of State Cash Value = 3.49	Utah Emissions (tons) % of State Cash Value = 10.52	Wasatch Emissions (tons) % of State Cash Value = 1.71	Washington Emissions (tons) % of State Cash Value = 1.24	Wayne Emissions (tons) % of State Cash Value = 1.55	Weber Emissions (tons) % of State Cash Value = 4.28%
Cattle									
	Beef	Steers	0.23	0.63	1.90	0.31	0.22	0.28	0.77
		Heifers*	0.14	0.38	1.14	0.19	0.13	0.17	0.46
		Calves**	0.11	0.30	0.91	0.15	0.11	0.13	0.37
		Cows	0.96	2.59	7.80	1.27	0.92	1.15	3.17
		Bulls	0.08	0.22	0.66	0.11	0.08	0.10	0.27
		Total Beef	**1.52**	**4.12**	**12.41**	**2.02**	**1.46**	**1.83**	**5.05**
	Dairy	Heifers***	2.80	7.58	22.86	3.72	2.69	3.37	9.30
		Cows	4.70	12.73	38.36	6.24	4.52	5.65	15.61
		Total Dairy	**7.51**	**20.31**	**61.22**	**9.95**	**7.22**	**9.02**	**24.91**
Swine^		Market	14.89	40.29	121.45	19.74	14.32	17.89	49.41
		Breeding	6.44	17.42	52.52	8.54	6.19	7.74	21.37
		Total Swine	**21.33**	**57.71**	**173.97**	**28.28**	**20.51**	**25.63**	**70.78**
Poultry^		Layers	4.30	11.64	35.10	5.71	4.14	5.17	14.28
		Broilers	1.44	3.90	11.76	1.91	1.39	1.73	4.78
		Ducks	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Turkeys	0.11	0.30	0.90	0.15	0.11	0.13	0.37
		Total Poultry	**5.86**	**15.84**	**47.76**	**7.76**	**5.63**	**7.04**	**19.43**
Other Animals		Sheep	0.16	0.43	1.29	0.21	0.15	0.19	0.52
		Goats	0.00	0.00	0.01	0.00	0.00	0.00	0.00
		Mules/Asses^	0.00	0.00	0.01	0.00	0.00	0.00	0.01
		Horses^^	0.16	0.43	1.30	0.21	0.15	0.19	0.53
		Total Emissions	**36.54**	**98.85**	**297.97**	**48.43**	**35.12**	**43.90**	**121.23**

Table E-6 1993 Maximum Potential Emissions

		Type	Populations: 1993	Typical Animal Mas (lbs/head)	Volatile Solids (VS) (lbs VS/lb mass)	Total Volatile Solids Produced (lbs)	Methane (CH4) Producing Capacit (cu ft/lbs VS)	Maximum Potential Emissions (cubic feet)
Cattle								
	Beef	Steers	115,000	794	2.6	237,406,000	2.72	645,744,320
		Heifers*	69,000	794	2.6	142,443,600	2.72	387,446,592
		Calves**	110,000	397	2.6	113,542,000	2.72	308,834,240
		Cows	340,000	1102	2.6	974,168,000	2.72	2,649,736,960
		Bulls	20,000	1587	2.6	82,524,000	2.72	224,465,280
	Dairy	Heifers***	71,000	903	3.65	234,012,450	3.84	898,607,808
		Cows	80,000	1345	3.65	392,740,000	3.84	1,508,121,600
Swine		Market	35,000	101	3.1	10,958,500	7.53	82,517,505
		Breeding	5,000	399	3.1	6,184,500	5.77	35,684,565
Poultry		Layers	1,880,000	3.5	4.4	59,290,000	5.45	323,130,500
		Broilers	1,210,000	1.5	6.2	11,253,000	4.81	54,126,930
		Ducks		3.1	6.75	0	5.13	0
		Turkeys	3,850,000	7.5	3.32	95,865,000	4.81	461,110,650
Other Animals								
	Goats		2,129	141	3.48	1,044,658	2.72	2,841,469
	Mules/Asses^		565	661	3.65	1,363,147	5.29	7,211,049
	Horses^^		34,778	992	3.65	125,924,182	5.29	666,138,925

Table E-7 1993 Methane Emissions from Manure Management

Animal Category	CH4 (lbs/yr)	CH4 (tons/yr)
Dairy Cattle	1,163,949.70	581.97
Beef Cattle	235,946.41	117.97
Swine	3,307,382.57	1,653.69
Poultry	907,948.19	453.97
Sheep	24,440.07	12.22
Goats	105.62	0.05
Mules/Asses	268.03	0.13
Horses	24,760.38	12.38
	5,664,800.97	2,832.40

Table E-8 1993 Methane Emissions by Animal Type

Utah Methane Convergence Factor (MCF) (%)	Manure System	Utah Waste System Useage (WS%) (%) Beef	Dairy	Swine	Poultry-Layer	Poultry-Broilers*	Poultry-Turkeys	Sheep	Goats	Horses
0.09%	Pasture/Range	95.00%					100.00%	95.00%	100.00%	80.00%
0.20%	Daily Spread		8.00%							
0.09%	Solid Storage		90.00%							
1.00%	Drylot	5.00%		25.00%						
10.00%	Deep Pit Stacks				50.00%					
10.00%	Litter					100.00%	0.00%			
0.09%	Paddock									20.00%
17.40%	Liquid/Slurry	0.00%	1.00%		0.00%					
90.00%	Anaerobic Lagoon	0.00%	1.00%	75.00%	0.00%					
8.70%	Pit Storage < 1 month			0.00%						
17.40%	Pit Storage > 1 month			0.00%						
	Other	0.00%	0.00%	0.00%	50.00%		0.00%	5.00%	0.00%	0.00%
		100.00%	100.00%	100.00%	100.00%		100.00%	100.00%	100.00%	100.00%

Beef Steers	Manure System	Methane Emission (Cubic Feet)	Methane Emissions (lbs)	Beef Heifers	Manure System	Methane Emissions (Cubic Feet)	Methane Emissions (lbs)
	Pasture/Range	552,111.39	22,802.20		Pasture/Range	331,266.84	13,681.32
	Daily Spread	0.00	0.00		Daily Spread	0.00	0.00
	Solid Storage	0.00	0.00		Solid Storage	0.00	0.00
	Drylot	322,872.16	13,334.62		Drylot	193,723.30	8,000.77
	Deep Pit Stacks	0.00	0.00		Deep Pit Stacks	0.00	0.00
	Litter	0.00	0.00		Litter	0.00	0.00
	Paddock	0.00	0.00		Paddock	0.00	0.00
	Liquid/Slurry	0.00	0.00		Liquid/Slurry	0.00	0.00
	Anaerobic Lagoon	0.00	0.00		Anaerobic Lagoon	0.00	0.00
	Pit Storage < 1 month	0.00	0.00		Pit Storage < 1 month	0.00	0.00
	Pit Storage > 1 month	0.00	0.00		Pit Storage > 1 month	0.00	0.00
		Total	36,136.82			Total	21,682.09

Dairy Heifers	Manure System	Methane Emission (Cubic Feet)	Methane Emissions (lbs)	Dairy Cows	Manure System	Methane Emissions (Cubic Feet)	Methane Emissions (lbs)
	Pasture/Range	0.00	0.00		Pasture/Range	0.00	0.00
	Daily Spread	143,777.25	5,938.00		Daily Spread	241,299.46	9,965.67
	Solid Storage	727,872.32	30,061.13		Solid Storage	1,221,578.50	50,451.19
	Drylot	0.00	0.00		Drylot	0.00	0.00
	Deep Pit Stacks	0.00	0.00		Deep Pit Stacks	0.00	0.00
	Litter	0.00	0.00		Litter	0.00	0.00
	Paddock	0.00	0.00		Paddock	0.00	0.00
	Liquid/Slurry	1,563,577.59	64,575.75		Liquid/Slurry	2,624,131.58	108,376.63
	Anaerobic Lagoon	8,087,470.27	334,012.52		Anaerobic Lagoon	13,573,094.40	560,568.80
	Pit Storage < 1 month	0.00	0.00		Pit Storage < 1 month	0.00	0.00
	Pit Storage > 1 month	0.00	0.00		Pit Storage > 1 month	0.00	0.00
		Total	434,587.40			Total	729,362.29

Table E-8 1993 Methane Emissions by Animal Type (continued)

Swine Market	Manure System	Methane Emission (Cubic Feet)	Methane Emissions (lbs)	Swine Breeding	Manure System	Methane Emissions (Cubic Feet)	Methane Emissions (lbs)
	Pasture/Range	0.00	0.00		Pasture/Range	0.00	0.00
	Daily Spread	0.00	0.00		Daily Spread	0.00	0.00
	Solid Storage	0.00	0.00		Solid Storage	0.00	0.00
	Drylot	206,293.76	8,519.93		Drylot	89,211.41	3,684.43
	Deep Pit Stacks	0.00	0.00		Deep Pit Stacks	0.00	0.00
	Litter	0.00	0.00		Litter	0.00	0.00
	Paddock	0.00	0.00		Paddock	0.00	0.00
	Liquid/Slurry	0.00	0.00		Liquid/Slurry	0.00	0.00
	Anaerobic Lagoon	55,699,315.88	2,300,381.75		Anaerobic Lagoon	24,087,081.38	994,796.46
	Pit Storage < 1 month	0.00	0.00		Pit Storage < 1 month	0.00	0.00
	Pit Storage > 1 month	0.00	0.00		Pit Storage > 1 month	0.00	0.00
		Total	2,308,901.68			Total	998,480.89

Poultry Layers	Manure System	Methane Emission (Cubic Feet)	Methane Emissions (lbs)	Poultry Broilers	Manure System	Methane Emissions (Cubic Feet)	Methane Emissions (lbs)
	Pasture/Range	0.00	0.00		Pasture/Range	0.00	0.00
	Daily Spread	0.00	0.00		Daily Spread	0.00	0.00
	Solid Storage	0.00	0.00		Solid Storage	0.00	0.00
	Drylot	0.00	0.00		Drylot	0.00	0.00
	Deep Pit Stacks	16,156,525.00	667,264.48		Deep Pit Stacks	0.00	0.00
	Litter	0.00	0.00		Litter	5,412,693.00	223,544.22
	Paddock	0.00	0.00		Paddock	0.00	0.00
	Liquid/Slurry	0.00	0.00		Liquid/Slurry	0.00	0.00
	Anaerobic Lagoon	0.00	0.00		Anaerobic Lagoon	0.00	0.00
	Pit Storage < 1 month	0.00	0.00		Pit Storage < 1 month	0.00	0.00
	Pit Storage > 1 month	0.00	0.00		Pit Storage > 1 month	0.00	0.00
		Total	667,264.48			Total	223,544.22

Other Animals Sheep	Manure System	Methane Emission (Cubic Feet)	Methane Emissions (lbs)	Other Animals Goats	Manure System	Methane Emissions (Cubic Feet)	Methane Emissions (lbs)
	Pasture/Range	591,769.22	24,440.07		Pasture/Range	2,557.32	105.62
	Daily Spread	0.00	0.00		Daily Spread	0.00	0.00
	Solid Storage	0.00	0.00		Solid Storage	0.00	0.00
	Drylot	0.00	0.00		Drylot	0.00	0.00
	Deep Pit Stacks	0.00	0.00		Deep Pit Stacks	0.00	0.00
	Litter	0.00	0.00		Litter	0.00	0.00
	Paddock	0.00	0.00		Paddock	0.00	0.00
	Liquid/Slurry	0.00	0.00		Liquid/Slurry	0.00	0.00
	Anaerobic Lagoon	0.00	0.00		Anaerobic Lagoon	0.00	0.00
	Pit Storage < 1 month	0.00	0.00		Pit Storage < 1 month	0.00	0.00
	Pit Storage > 1 month	0.00	0.00		Pit Storage > 1 month	0.00	0.00
		Total	24,440.07			Total	105.62

Table E-8 1993 Methane Emissions by Animal Type (continued)

Beef Calves	Manure System	Methane Emissions (Cubic Feet)	Methane Emissions (lbs)
	Pasture/Range	264,053.28	10,905.40
	Daily Spread	0.00	0.00
	Solid Storage	0.00	0.00
	Drylot	154,417.12	6,377.43
	Deep Pit Stacks	0.00	0.00
	Litter	0.00	0.00
	Paddock	0.00	0.00
	Liquid/Slurry	0.00	0.00
	Anaerobic Lagoon	0.00	0.00
	Pit Storage < 1 month	0.00	0.00
	Pit Storage > 1 month	0.00	0.00
		Total	17,282.83

Beef Cows	Manure System	Methane Emissions (Cubic Feet)	Methane Emissions (lbs)
	Pasture/Range	2,265,525.10	93,566.19
	Daily Spread	0.00	0.00
	Solid Storage	0.00	0.00
	Drylot	1,324,868.48	54,717.07
	Deep Pit Stacks	0.00	0.00
	Litter	0.00	0.00
	Paddock	0.00	0.00
	Liquid/Slurry	0.00	0.00
	Anaerobic Lagoon	0.00	0.00
	Pit Storage < 1 month	0.00	0.00
	Pit Storage > 1 month	0.00	0.00
		Total	148,283.25

Beef Bulls	Manure System	Methane Emissions (Cubic Feet)	Methane Emissions (lbs)
	Pasture/Range	191,917.81	7,926.21
	Daily Spread	0.00	0.00
	Solid Storage	0.00	0.00
	Drylot	112,232.64	4,635.21
	Deep Pit Stacks	0.00	0.00
	Litter	0.00	0.00
	Paddock	0.00	0.00
	Liquid/Slurry	0.00	0.00
	Anaerobic Lagoon	0.00	0.00
	Pit Storage < 1 month	0.00	0.00
	Pit Storage > 1 month	0.00	0.00
		Total	12,561.41

Poultry Turkeys	Manure System	Methane Emissions (Cubic Feet)	Methane Emissions (lbs)
	Pasture/Range	414,999.59	17,139.48
	Daily Spread	0.00	0.00
	Solid Storage	0.00	0.00
	Drylot	0.00	0.00
	Deep Pit Stacks	0.00	0.00
	Litter	0.00	0.00
	Paddock	0.00	0.00
	Liquid/Slurry	0.00	0.00
	Anaerobic Lagoon	0.00	0.00
	Pit Storage < 1 month	0.00	0.00
	Pit Storage > 1 month	0.00	0.00
		Total	17,139.48

Other Animals Mules/Asses	Manure System	Methane Emissions (Cubic Feet)	Methane Emissions (lbs)
	Pasture/Range	5,191.96	214.43
	Daily Spread	0.00	0.00
	Solid Storage	0.00	0.00
	Drylot	0.00	0.00
	Deep Pit Stacks	0.00	0.00
	Litter	0.00	0.00
	Paddock	1,297.99	53.61
	Liquid/Slurry	0.00	0.00
	Anaerobic Lagoon	0.00	0.00
	Pit Storage < 1 month	0.00	0.00
	Pit Storage > 1 month	0.00	0.00
		Total	268.03

Other Animals Horses	Manure System	Methane Emissions (Cubic Feet)	Methane Emissions (lbs)
	Pasture/Range	479,620.03	19,808.31
	Daily Spread	0.00	0.00
	Solid Storage	0.00	0.00
	Drylot	0.00	0.00
	Deep Pit Stacks	0.00	0.00
	Litter	0.00	0.00
	Paddock	119,905.01	4,952.08
	Liquid/Slurry	0.00	0.00
	Anaerobic Lagoon	0.00	0.00
	Pit Storage < 1 month	0.00	0.00
	Pit Storage > 1 month	0.00	0.00
		Total	24,760.38

Appendix F

Agricultural Soil Management

Table F-1 Fertilizer Consumption (Tons) by County 1991

Fertilizer Types	% Nitrogen Content	Content Ref.	Beaver	Box Elder	Cache	Carbon	Daggett	Duchesne	Davis	Emery	Garfield	Grand	Iron	Juab	Kane	Millard	Morgan	Piute
Nitrogen																		
Ammonium Nitrate	33.5	EPA		4521.02	2521.13	208.82		2550.79	725.10	26.67			435.73	117.43		1027.24	0.80	
Ammonium Sulfate	21	EPA	0.59	314.42	244.41	12.63	0.11	206.61	34.88		0.83		1.20	0.39	0.76	0.80	44.50	0.10
Anhydrous Ammonia	82	EPA		1676.54														
Calcium Nitrate	15	EPA																
Nitrogen Solution 28%	28	EPA			24.54													
Nitrogen Solution 30%	30	EPA																
Nitrogen Solution 32%	32	EPA		5945.16	544.76				165.83							864.26		
Sodium Nitrate	16	EPA																
Sulfur coated Urea	38	EPA																
Urea	46	EPA	0.08	0.44	856.92	0.25	0.03	28.59	0.16	0.09	0.11		0.20	34.76	0.10	1.28	0.05	0.01
Phosphate																		
Superphosphate, Triple	-		0.80	870.58	1231.99	0.28		14.96	114.22	186.87	0.06		0.25	545.71	0.11	219.35	93.82	7452.30
Potash																		
Murite of Potash 60%	-				65.35			1544.56	370.03									
Potassium Sulfate	-							288.72										
Multiple Nutrient																		
Ammonium Phosphate Sulfate	14.5	EPA	80.30			1.09							1.06					
Diammonium Phosphate	18.5	EPA		2.85														
Epson Salt	-																	
Gypsum (Calcium Sulfate)	-																	
Lime Product - Code Unk.	-																	
Monoammonium Phosphate	11	EPA	285.89	1143.97	793.59			871.04	316.95				183.85	77.72		445.57	205.72	
Potash - Not Identified	15	EPA																
Potassium Nitrate	13	EPA																
Sulfur	-		62.14					3.18				25.40		0.13				
Unknown																		
Ammonium Thiosulfate	-			812.17	24.11													
Borax	-																	
Calcium Chelate	-																	
Manure	5	UDADPI																
Copper Sulfate	-																	
Ferric Sulfate	-																	
Ferrous Sulfate	-																	
Iron Chelate	-							0.73										
Iron compound	-																	
Liquid Amm Polyphosphate	11	UDADPI		461.43	918.55				104.36									
Mangesium Chelate	-																	
Manganese Chelate	-																	
Manganese Sulfate	-																	
Mixed Grades	17.2	WGGE	0.10	0.77	1.65			42.59		0.26			1930.60	0.13		3.34		
Mult. Nutrient-Code/Grade Un	14.2	TVA																
Nitric Acid	33	UDADPI																
Phosphate Prod. Code Unk.	-			485.27	41.35													
Zinc Chelate	-					14.07										633.92	313.77	
Zinc Sulfate	-																	0.28
TOTAL			429.90	16234.61	7268.34	237.14	0.14	5551.77	1831.52	213.88	0.99	25.40	2552.89	776.26	0.97	3195.77	658.67	7452.69

Mixed Grades include: Fert. Prod. Code/Grade Unknown, Sec./Micro-Code Unknown, Sec./Micro-Code Unknown./Grade Unknown, and Single Nutrient - Unknown

Table F-1 Fertilizer Consumption (Tons) by County 1991 (continued)

Fertilizer Types	% Nitrogen Content	Content Ref.	Rich	Salt Lake	San Juan	Sanpete	Sevier	Summit	Tooele	Uintah	Utah	Wasatch	Washington	Wayne	Weber	Statewide Total
Nitrogen																
Ammonium Nitrate	33.5	EPA		2934.07		444.86	281.35	1609.58		615.46	2933.79	245.27	1187.78	173.36	1812.43	24406.16
Ammonium Sulfate	21	EPA	0.26	1450.90	4.18	0.99	1.27	0.70	4.19	624.13	11971.90	17.51	108.78		178.95	15247.00
Anhydrous Ammonia	82	EPA		82.80							164.33					2005.67
Calcium Nitrate	15	EPA														15.00
Nitrogen Solution 28%	28	EPA														52.54
Nitrogen Solution 30%	30	EPA														30.00
Nitrogen Solution 32%	32	EPA		36.23				1.78		1311.10	243.37					9144.48
Sodium Nitrate	16	EPA														16.00
Sulfur coated Urea	38	EPA														38.00
Urea	46	EPA	0.03	5090.63	0.58		0.21	1.53	9.65	0.23	512.62	1.04	0.82		1.90	6588.29
Phosphate																
Superphosphate, Triple	-			1469.56				0.14			2.95	0.11	0.60		2.09	12206.73
Potash																
Murite of Potash 60%	-															0.00
Potassium Sulfate	-					144.83					78.54				940.49	3143.80
Multiple Nutrient																
Ammonium Phosphate Sulfate	14.5	EPA														288.72
Diammonium Phosphate	18.5	EPA		733.05									219.44			0.00
Epson Salt	-										52.33					316.39
Gypsum (Calcium Sulfate)	-			3992.37		433.59			435.19						227.80	1034.53
Lime Product - Code Unk.	-															0.00
Monoammonium Phosphate	11	EPA														4861.15
Potash - Not Identified	15	EPA								914.19	688.36		405.63			0.00
Potassium Nitrate	13	EPA														6343.47
Sulfur	-			1348.10		0.25										15.00
Unknown																13.00
Ammonium Thiosulfate	-			33.98												1439.20
Borax	-															0.00
Calcium Chelate	-															870.26
Manure	5	UDADPI		413.67												0.00
Copper Sulfate	-															0.00
Ferric Sulfate	-			248.20												418.67
Ferrous Sulfate	-															0.00
Iron Chelate	-															248.20
Iron compound	-															0.00
Liquid Amm Polyphosphate	11	UDADPI													0.03	0.75
Mangesium Chelate	-															0.00
Manganese Chelate	-															1495.35
Manganese Sulfate	-															0.00
Mixed Grades	17.2	WGGE		2799.72												0.00
Mult. Nutrient-Code/Grade U	14.2	TVA		0.04					0.04		9.51	0.08	106.21		126.78	5039.00
Nitric Acid	33	UDADPI		0.07												14.24
Phosphate Prod. Code Unk.	-			45.90							4.65					37.72
Zinc Chelate	-															1520.21
Zinc Sulfate	-															14.34
																0.00
TOTAL	493.90	0.00	0.29	20679.31	4.76	1024.52	282.83	1613.72	449.06	3465.11	16662.35	264.01	2029.26	173.36	3290.46	96863.88

Mixed Grades Include: Fert. Prod. Code/Grade Unknown, Sec./Micro-Code Unknown, Sec./Micro-Code Unknown./Grade Unknown, and Single Nutrient - Unknown

Table F-2 Fertilizer Consumption (Tons) by County 1992

Fertilizer Types	%Nitrogen Content	Content Ref.	Beaver	Box Elder	Cache	Carbon	Daggett	Duchesne	Davis	Emery	Garfield	Grand	Iron	Juab	Kane	Millard	Morgan
Nitrogen																	
Ammonium Nitrate	33.5	EPA	166.04	4835.98	2850.35	295.55	24.62	1396.46	882.50	70.89				261.05		705.99	260.20
Ammonium Sulfate	21	EPA	209.40	1235.45	18.17			103.82								448.39	
Anhydrous Ammonia	82	EPA		2134.07													
Calcium Nitrate	15	EPA															
Nitrogen Solution 28%	28	EPA															
Nitrogen Solution 30%	30	EPA															
Nitrogen Solution 32%	32	EPA	274.18		153.82			2.86	246.88							528.37	
Sodium Nitrate	16	EPA															
Sulfur coated Urea	38	EPA															
Urea	46	EPA			1372.18			469.00						56.63			
Phosphate																	
Superphosphate, Triple	-							39.80									
Potash																	
Murite of Potash 60%	-			170.39	133.09			93.78									
Potassium Sulfate	-																
Multiple Nutrient																	
Ammonium Phosphate Sulfate	14.5	EPA															
Diammonium Phosphate	18.5	EPA															
Epson Salt	-																
Gypsum (Calcium Sulfate)	-																
Lime Product - Code Unk.	-																
Monoammonium Phosphate	11	EPA	777.22	836.33	246.21	229.72	37.23	660.54	828.36					34.53		2501.33	
Potash - Not Identified	15	EPA															
Potassium Nitrate	13	EPA															
Sulfur	-				13.43			142.63	343.39			31.94				100.53	
Unknown																	
Ammonium Thiosulfate	-		70.49	209.95													
Borax	-																
Calcium Chelate	-																
Manure	5	UDADPI															
Copper Sulfate	-																
Ferric Sulfate	-																
Ferrous Sulfate	-																
Iron Chelate	-							2.68									
Iron compound	-																
Liquid Amm Polyphosphate	11	UDADPI		1320.63	128.11											405.82	
Mangesium Chelate	-																
Manganese Chelate	-																
Manganese Sulfate	-																
Mixed Grades	17.2	WGGE		130.51	17.63			1.01	1570.29	0.95			981.51		0.28	3.16	
Mult. Nutrient-Code/Grade Un	14.2	TVA						65.06									
Nitric Acid	33	UDADPI															
Phosphate Prod. Code Unk.	-		1160.25	210.48	712.47			0.23		343.52				206.53			
Zinc Chelate	-							2.18									
Zinc Sulfate	-																
TOTAL			2657.57	11083.78	5645.46	525.27	61.85	2980.05	3871.41	415.36	0.00	31.94	981.51	558.74	0.28	4693.59	260.20

Mixed Grades Include: Fert. Prod. Code/Grade Unknown, Sec./Micro-Code Unknown, Sec./Micro-Code Unknown./Grade Unknown, and Single Nutrient - Unknown

Table F-2 Fertilizer Consumption (Tons) by County 1992 (continued)

Fertilizer Types	%Nitrogen Content	Content Ref.	Piute	Rich	Salt Lake	San Juan	Sanpete	Sevier	Summit	Tooele	Uintah	Utah	Wasatch	Washington	Wayne	Weber	Statewide Total
Nitrogen																	
Ammonium Nitrate	33.5	EPA	56.66		2843.06		202.52		2001.00			3632.73		155.22	103.38	1407.46	22185.17
Ammonium Sulfate	21	EPA			631.45						1545.69	5119.82	281.57	59.56		39.94	9714.25
Anhydrous Ammonia	82	EPA									1131.07						3347.14
Calcium Nitrate	15	EPA															15.00
Nitrogen Solution 28%	28	EPA															28.00
Nitrogen Solution 30%	30	EPA															30.00
Nitrogen Solution 32%	32	EPA			2.29		1872.54				1479.98						4592.92
Sodium Nitrate	16	EPA															16.00
Sulfur coated Urea	38	EPA															38.00
Urea	46	EPA			3407.87	174.27						192.25					5718.20
Phosphate																	
Superphosphate, Triple	-				855.31												0.00
Potash											1851.38					3852.63	6599.13
Murite of Potash 60%	-				81.27		118.76										0.00
Potassium Sulfate	-															59.31	656.60
Multiple Nutrient																	0.00
Ammonium Phosphate Sulfate	14.5	EPA			1.68												0.00
Diammonium Phosphate	18.5	EPA			2482.57												16.18
Epson Salt	-										575.07	100.48		495.83			3672.45
Gypsum (Calcium Sulfate)	-				13438.72		323.93			350.10							0.00
Lime Product - Code Unk.	-													454.25			14566.99
Monoammonium Phosphate	11	EPA	99.80				98.57										0.00
Potash - Not Identified	15	EPA									497.15	3488.37		255.55			10601.90
Potassium Nitrate	13	EPA															15.00
Sulfur	-				164.69		0.14										13.00
Unknown												140.70		214.60			1152.04
Ammonium Thiosulfate	-				71.37												0.00
Borax	-																351.81
Calcium Chelate	-																0.00
Manure	5	UDADPI			181.49												0.00
Copper Sulfate	-																186.49
Ferric Sulfate	-																0.00
Ferrous Sulfate	-																0.00
Iron Chelate	-				8.41			0.06									0.00
Iron compound	-																11.15
Liquid Amm Polyphosphate	11	UDADPI															0.00
Mangesium Chelate	-																1865.56
Manganese Chelate	-																0.00
Manganese Sulfate	-																0.00
Mixed Grades	17.2	WGGE			3157.29	0.70					0.29	227.34				211.25	6319.41
Mult. Nutrient-Code/Grade Un	14.2	TVA			696.63											395.85	1171.74
Nitric Acid	33	UDADPI															33.00
Phosphate Prod. Code Unk.	-				169.11			488.66				328.52					3619.75
Zinc Chelate	-															0.41	2.59
Zinc Sulfate	-																0.00
TOTAL	493.90	0.00	156.46	0.00	28193.23	174.97	2616.46	488.71	2001.00	350.10	7080.62	13230.21	281.57	1635.01	103.38	5966.85	96539.48

Mixed Grades Include: Fert. Prod. Code/Grade Unknown, Sec./Micro-Code Unknown, Sec./Micro-Code Unknown./Grade Unknown, and Single Nutrient - Unknown

Table F-3 Fertilizer Consumption (Tons) by County 1993

Fertilizer Types	% Nitrogen Content	Content Ref.	Beaver	Box Elder	Cache	Carbon	Daggett	Duchesne	Davis	Emery	Garfield	Grand	Iron	Juab	Kane	Millard	Morgan	Piute
Nitrogen																		
Ammonium Nitrate	33.5	EPA	150.50	9233.58	4824.28	277.37	301.01	377.87	967.45	777.33			97.39	984.06		2880.52	2593.83	
Ammonium Sulfate	21	EPA		1478.49	299.50	31.49		326.02	541.41		1.03		3.50		11.69	670.68	90.63	
Anhydrous Ammonia	82	EPA		979.84														
Calcium Nitrate	15	EPA																
Nitrogen Solution 28%	28	EPA		80.62														
Nitrogen Solution 30%	30	EPA																
Nitrogen Solution 32%	32	EPA		5729.67	123.04			7.10		130.85			0.85			448.26		
Sodium Nitrate	16	EPA		46.96														
Sulfur coated Urea	38	EPA																
Urea	46	EPA		115.28	1496.72			73.07										
Phosphate																		
Superphosphate, Triple	-							3159.24								4221.60		
Potash																		
Murite of Potash 60%	-			199.84	361.63			290.35	1775.96					1.88			241.97	
Potassium Sulfate	-																	
Multiple Nutrient																		
Ammonium Phosphate Sulfat	14.5	EPA	80.30			1.09							1.06					77.13
Diammonium Phosphate	18.5	EPA		2.85														
Epson Salt	-																	
Gypsum (Calcium Sulfate)	-																	
Lime Product - Code Unk.	-																	
Monoammonium Phosphate	11	EPA	285.89	1143.97	793.59			871.04	316.95				183.85	77.72		445.57	205.72	
Potash - not identified	15	EPA																
Potassium Nitrate	13	EPA																
Sulfur	-		62.14					3.18				25.40		0.13				
Unknown																		
Ammonium Thiosulfate	-			812.17	24.11													
Borax	-																	
Calcium Chelate	-																	
Manure	5	UDADPI																
Copper Sulfate	-																	
Ferric Sulfate	-																	
Ferrous Sulfate	-																	
Iron Chelate	-							0.73										
Iron compound	-																	
Liquid Amm Polyphosphate	11	UDADPI		461.43	918.55				104.36									
Mangesium Chelate	-																	
Manganese Chelate	-																	
Manganese Sulfate	-																	
Mixed Grades	17.2	WGGE		186.84	0.66			59.06	300.28							11.71		
Mult. Nutrient-Code/Grade U	14.2	TVA																
Nitric Acid	33	UDADPI																
Phosphate Prod. Code Unk.	-			485.27	41.35											633.92	313.77	
Zinc Chelate	-																	
Zinc Sulfate	-																	
TOTAL			578.83	20956.80	8883.43	309.95	301.01	5167.66	4006.41	908.18	1.03	25.40	286.65	1063.79	11.69	9312.25	3445.92	77.13

Mixed Grades Include: Fert. Prod. Code/Grade Unknown, Sec./Micro-Code Unknown, Sec./Micro-Code Unknown./Grade Unknown, and Single Nutrient - Unknown

Table F-3 Fertilizer Consumption (Tons) by County 1993 (continued)

Fertilizer Types	% Nitrogen Content	Content Ref.	Rich	Salt Lake	San Juan	Sanpete	Sevier	Summit	Tooele	Uintah	Utah	Wasatch	Washington	Wayne	Weber	Statewide Total
Nitrogen																
Ammonium Nitrate	33.5	EPA		2535.11		1083.66	950.67		2640.70	1270.05	6297.88	192.51	521.41	191.29	1834.85	41016.81
Ammonium Sulfate	21	EPA		6690.97		13.34	5.79	10.70	12317.32		445.51		6.85		79.24	23045.16
Anhydrous Ammonia	82	EPA		197.44												1259.28
Calcium Nitrate	15	EPA														15.00
Nitrogen Solution 28%	28	EPA														108.62
Nitrogen Solution 30%	30	EPA														30.00
Nitrogen Solution 32%	32	EPA		240.42						277.22	4435.28		19.97			11444.64
Sodium Nitrate	16	EPA		0.62		0.31										63.90
Sulfur coated Urea	38	EPA														38.00
Urea	46	EPA		6089.49	53.37						202.18					8076.11
Phosphate																
Superphosphate, Triple	-															0.00
Potash																7380.85
Murite of Potash 60%	-			452.38		194.60										0.00
Potassium Sulfate	-			5.12							566.00				491.12	4575.71
Multiple Nutrient																5.12
Ammonium Phosphate Sulfat	14.5	EPA														0.00
Diammonium Phosphate	18.5	EPA		733.05									219.44			393.51
Epson Salt	-										52.33				227.80	1034.53
Gypsum (Calcium Sulfate)	-			3992.37		433.59			435.19							0.00
Lime Product - Code Unk.	-															4861.15
Monoammonium Phosphate	11	EPA														0.00
Potash - not identified	15	EPA								914.19	688.36		405.63			6343.47
Potassium Nitrate	13	EPA														15.00
Sulfur	-			1348.10		0.25										13.00
Unknown																1439.20
Ammonium Thiosulfate	-			33.98												0.00
Borax	-															870.26
Calcium Chelate	-															0.00
Manure	5	UDADPI		413.67												0.00
Copper Sulfate	-															418.67
Ferric Sulfate	-			248.20												0.00
Ferrous Sulfate	-															248.20
Iron Chelate	-															0.00
Iron compound	-														0.03	0.75
Liquid Amm Polyphosphate	11	UDADPI														0.00
Mangesium Chelate	-															1495.35
Manganese Chelate	-															0.00
Manganese Sulfate	-															0.00
Mixed Grades	17.2	WGGE		1605.41												0.00
Mult. Nutrient-Code/Grade U	14.2	TVA		0.04							459.00		579.01		6.65	3225.82
Nitric Acid	33	UDADPI		0.07												14.24
Phosphate Prod. Code Unk.	-			45.90							4.65					37.72
Zinc Chelate	-															1520.21
Zinc Sulfate	-															0.00
																0.00
TOTAL			0.00	24632.35	53.37	1725.76	956.45	10.70	15393.21	2461.46	13151.19	192.51	1752.31	191.29	2639.68	118496.40

Mixed Grades Include: Fert. Prod. Code/Grade Unknown, Sec./Micro-Code Unknown, Sec./Micro-Code Unknown./Grade Unknown, and Single Nutrient - Unknown

Table F-4 Fertilizer Consumption (Tons) by County 1994

Fertilizer Types	Nitrogen Content	Content Ref.	Beaver	Box Elder	Cache	Carbon	Daggett	Duchesne	Davis	Emery	Garfield	Grand	Iron	Juab	Kane	Millard	Morgan
Nitrogen																	
Ammonium Nitrate	33.5	EPA	356.07	7272.73	5371.80	199.80		2737.32	243.51	284.41			415.05	300.13		1903.46	70.67
Ammonium Sulfate	21	EPA	36.99	1424.45	398.47	9.82		192.80	441.07	2.73			70.45		4.10	665.77	
Anhydrous Ammonia	82	EPA		518.13	312.80								1072.86				
Calcium Nitrate	15	EPA															
Nitrogen Solution 28%	28	EPA															
Nitrogen Solution 30%	30	EPA															
Nitrogen Solution 32%	32	EPA		3983.11	427.54				163.07	206.19				69.63		1222.27	
Sodium Nitrate	16	EPA										1.50					
Sulfur coated Urea	38	EPA															
Urea	46	EPA		50.36	1025.41			260.48									
Phosphate																	
Superphosphate, Triple	-		782.80		501.15				89.34	291.88			66.03	4009.80		630.77	53.33
Potash																	
Murite of Potash 60%	-			213.76	305.78			345.16	2316.79					1.51		49.81	431.23
Potassium Sulfate	-																
Multiple Nutrient																	
Ammonium Phosphate Sulfate	14.5	EPA															
Diammonium Phosphate	18.5	EPA															
Epson Salt	-																
Gypsum (Calcium Sulfate)	-																
Lime Product - Code Unk.	-																
Monoammonium Phosphate	11	EPA	777.22	836.33	246.21	229.72	37.23	660.54	828.36					34.53		2501.33	
Potash - Not Identified	15	EPA															
Potassium Nitrate	13	EPA															
Sulfur	-				13.43			142.63	343.39			31.94				100.53	
Unknown																	
Ammonium Thiosulfate	-		70.49	209.95													
Borax	-																
Calcium Chelate	-																
Manure	5	UDADPI															
Copper Sulfate	-																
Ferric Sulfate	-																
Ferrous Sulfate	-																
Iron Chelate	-							2.68									
Iron compound	-																
Liquid Amm Polyphosphate	11	UDADPI		1320.63	128.11											405.82	
Mangesium Chelate	-																
Manganese Chelate	-																
Manganese Sulfate	-																
Mixed Grades	17.2	WGGE										1.50					
Mult. Nutrient-Code/Grade Un	14.2	TVA						65.06									
Nitric Acid	33	UDADPI															
Phosphate Prod. Code Unk.	-		1160.25	210.48	712.47			0.23		343.52				206.53			
Zinc Chelate	-																
Zinc Sulfate	-																
TOTAL			3183.82	16039.92	9443.17	439.34	37.23	4406.90	4425.53	1128.72	0.00	34.95	1624.40	4622.12	4.10	7479.75	555.23

Mixed Grades Include: Fert. Prod. Code/Grade Unknown, Sec./Micro-Code Unknown, Sec./Micro-Code Unknown./Grade Unknown, and Single Nutrient - Unknown

Table F-4 Fertilizer Consumption (Tons) by County 1994 (continued)

Fertilizer Types	Nitrogen Content	Content Ref.	Piute	Rich	Salt Lake	San Juan	Sanpete	Sevier	Summit	Tooele	Uintah	Utah	Wasatch	Washington	Wayne	Weber	Statewide Total
Nitrogen																	
Ammonium Nitrate	33.5	EPA	105.86		3112.99		847.46	1127.96	2064.10	11.15	1157.67	6197.70	238.36	572.02	129.26	2056.25	36809.22
Ammonium Sulfate	21	EPA			3183.24		65.74	2.75	2.78	11.76		5044.04		217.27		21.83	11817.08
Anhydrous Ammonia	82	EPA			537.57						9.06						2532.42
Calcium Nitrate	15	EPA															15.00
Nitrogen Solution 28%	28	EPA													49.85		77.85
Nitrogen Solution 30%	30	EPA										29.02					59.02
Nitrogen Solution 32%	32	EPA						256.58			454.27	1629.91		118.02			8562.59
Sodium Nitrate	16	EPA			903.73												921.24
Sulfur coated Urea	38	EPA															38.00
Urea	46	EPA			3716.26	106.32			2.99			526.80		15.34		40.66	5790.62
Phosphate																	
Superphosphate, Triple	-				1155.89		1727.25					116.05	217.67	131.51	52.20	617.79	10443.45
Potash																	
Murite of Potash 60%	-				291.61		179.98	194.20				1472.16				242.91	6044.89
Potassium Sulfate	-				2.80												2.80
Multiple Nutrient																	
Ammonium Phosphate Sulfate	14.5	EPA			1.68												0.00
Diammonium Phosphate	18.5	EPA			2482.57						575.07	100.48		495.83			3672.45
Epson Salt	-																0.00
Gypsum (Calcium Sulfate)	-				13438.72		323.93			350.10				454.25			14566.99
Lime Product - Code Unk.	-																0.00
Monoammonium Phosphate	11	EPA	99.80				98.57				497.15	3488.37		255.55			10601.90
Potash - Not Identified	15	EPA															15.00
Potassium Nitrate	13	EPA															13.00
Sulfur	-				164.69		0.14					140.70		214.60			1152.04
Unknown																	
Ammonium Thiosulfate	-				71.37												0.00
Borax	-																351.81
Calcium Chelate	-																0.00
Manure	5	UDADPI			181.49												0.00
Copper Sulfate	-																186.49
Ferric Sulfate	-																0.00
Ferrous Sulfate	-																0.00
Iron Chelate	-				8.41			0.06									0.00
Iron compound	-																11.15
Liquid Amm Polyphosphate	11	UDADPI															0.00
Mangesium Chelate	-																1865.56
Manganese Chelate	-																0.00
Manganese Sulfate	-																0.00
Mixed Grades	17.2	WGGE			3515.79	300.89			1097.06					139.77		139.72	5211.93
Mult. Nutrient-Code/Grade Un	14.2	TVA			696.63											395.85	1171.74
Nitric Acid	33	UDADPI															33.00
Phosphate Prod. Code Unk.	-				169.11			488.66				328.52					3619.75
Zinc Chelate	-																0.00
Zinc Sulfate	-																0.00
TOTAL			205.66	0.00	33634.56	407.21	3243.05	2070.21	3166.93	373.01	2693.23	19073.74	456.04	2614.15	231.31	3515.00	125603.17

Mixed Grades Include: Fert. Prod. Code/Grade Unknown, Sec./Micro-Code Unknown, Sec./Micro-Code Unknown./Grade Unknown, and Single Nutrient - Unknown

Table F-5 Average Fertilizer Consumption (tons) by County
1991, 1992, 1993.

Fertilizer Types	Beaver	Box Elder	Cache	Carbon	Daggett	Duchesne	Davis	Emery	Garfield	Grand	Iron	Juab	Kane	Millard	Morgan
Nitrogen															
Ammonium Nitrate	105.52	6196.86	3398.58	260.58	108.54	1441.71	858.35	291.63	0.00	0.00	177.71	454.18	0.00	1537.92	951.61
Ammonium Sulfate	70.00	1009.45	187.36	14.71	0.04	212.15	192.10	0.00	0.62	0.00	1.57	0.13	4.15	373.29	45.04
Anhydrous Ammonia	0.00	1596.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Calcium Nitrate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Nitrogen Solution 28%	0.00	26.87	8.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Nitrogen Solution 30%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Nitrogen Solution 32%	91.39	3891.61	273.87	0.00	0.00	3.32	137.57	43.62	0.00	0.00	0.28	0.00	0.00	613.63	0.00
Sodium Nitrate	0.00	15.65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sulfur coated Urea	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Urea	0.03	38.57	1241.94	0.08	0.01	190.22	0.05	0.03	0.04	0.00	0.07	30.46	0.03	0.43	0.02
Phosphate															
Superphosphate, Triple	0.27	290.19	410.66	0.09	0.00	1071.34	38.07	62.29	0.02	0.00	0.08	181.90	0.04	1480.32	31.27
Potash															
Murite of Potash 60%	0.00	123.41	186.69	0.00	0.00	642.90	715.33	0.00	0.00	0.00	0.00	0.63	0.00	0.00	80.66
Potassium Sulfate	0.00	0.00	0.00	0.00	0.00	96.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Multiple Nutrient															
Ammonium Phosphate Sulf	53.53	0.00	0.00	0.73	0.00	0.00	0.00	0.00	0.00	0.00	0.71	0.00	0.00	0.00	0.00
Diammonium Phosphate	0.00	1.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Epson Salt	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Gypsum (Calcium Sulfate)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lime Product - Code Unk.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Monoammonium Phosphat	449.67	1041.42	611.13	76.57	12.41	800.87	487.42	0.00	0.00	0.00	122.57	63.32	0.00	1130.82	137.15
Potash - Not Identified	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Potassium Nitrate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sulfur	41.43	0.00	4.48	0.00	0.00	49.67	114.46	0.00	0.00	27.58	0.00	0.08	0.00	33.51	0.00
Unknown															
Ammonium Thiosulfate	23.50	611.43	16.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Borax	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Calcium Chelate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Manure	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Copper Sulfate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ferric Sulfate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ferrous Sulfate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Iron Chelate	0.00	0.00	0.00	0.00	0.00	1.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Iron compound	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Liquid Amm Polyphosphat	0.00	747.83	655.07	0.00	0.00	0.00	69.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mangesium Chelate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	135.27	0.00
Manganese Chelate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Manganese Sulfate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mixed Grades	0.03	106.04	6.65	0.00	0.00	34.22	623.52	0.40	0.00	0.00	970.71	0.04	0.09	6.07	0.00
Mult. Nutrient-Code/Grade	0.00	0.00	0.00	0.00	0.00	21.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Nitric Acid	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phosphate Prod. Code Unk	386.75	393.67	265.06	0.00	0.00	0.08	0.00	114.51	0.00	0.00	0.00	68.84	0.00	422.61	209.18
Zinc Chelate	0.00	0.00	0.00	4.69	0.00	0.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Zinc Sulfate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	1222.10	16091.73	7265.74	357.45	121.00	4566.49	3236.45	512.47	0.67	27.58	1273.68	799.59	4.31	5733.87	1454.93

Table F-5 Average Fertilizer Consumption (tons) by County (continued)
1991, 1992, 1993

Fertilizer Types	Piute	Rich	Salt Lake	San Juan	Sanpete	Sevier	Summit	Tooele	Uintah	Utah	Wasatch	Washington	Wayne	Weber	Statewide Total
Nitrogen															
Ammonium Nitrate	18.89	0.00	2770.75	0.00	577.01	410.67	1203.53	880.23	628.50	4288.13	145.92	621.47	156.01	1684.91	29169.21
Ammonium Sulfate	0.03	0.09	2924.44	1.39	4.78	2.35	3.80	4107.17	723.27	5845.74	99.69	58.40	0.00	99.38	15981.14
Anhydrous Ammonia	0.00	0.00	93.41	0.00	0.00	0.00	0.00	0.00	377.02	54.78	0.00	0.00	0.00	0.00	2122.03
Calcium Nitrate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Nitrogen Solution 28%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	35.05
Nitrogen Solution 30%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Nitrogen Solution 32%	0.00	0.00	92.98	0.00	624.18	0.00	0.59	0.00	1022.77	1559.55	0.00	6.66	0.00	0.00	8362.01
Sodium Nitrate	0.00	0.00	0.21	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	15.97
Sulfur coated Urea	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Urea	0.00	0.01	4862.66	76.07	0.00	0.07	0.51	3.22	0.08	302.35	0.35	0.27	0.00	0.63	6748.20
Phosphate															0.00
Superphosphate, Triple	2484.10	0.00	774.96	0.00	0.00	0.00	0.05	0.00	617.13	0.98	0.04	0.20	0.00	1284.91	8728.90
Potash															0.00
Murite of Potash 60%	0.00	0.00	177.88	0.00	152.73	0.00	0.00	0.00	0.00	214.85	0.00	0.00	0.00	496.97	2792.04
Potassium Sulfate	0.00	0.00	1.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	97.95
Multiple Nutrient															0.00
Ammonium Phosphate Sulf	25.71	0.00	0.56	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	146.29	0.00	0.00	227.53
Diammonium Phosphate	0.00	0.00	1316.22	0.00	0.00	0.00	0.00	0.00	191.69	68.38	0.00	165.28	0.00	151.86	1895.34
Epson Salt	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Gypsum (Calcium Sulfate)	0.00	0.00	7141.15	0.00	397.04	0.00	0.00	406.82	0.00	0.00	0.00	151.42	0.00	0.00	8096.43
Lime Product - Code Unk.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Monoammonium Phosphat	33.27	0.00	0.00	0.00	32.86	0.00	0.00	0.00	775.18	1621.70	0.00	355.61	0.00	0.00	7751.95
Potash - Not Identified	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Potassium Nitrate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sulfur	0.00	0.00	953.63	0.00	0.21	0.00	0.00	0.00	0.00	46.90	0.00	71.53	0.00	0.00	1343.48
Unknown															0.00
Ammonium Thiosulfate	0.00	0.00	46.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	697.45
Borax	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Calcium Chelate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Manure	0.00	0.00	336.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	336.28
Copper Sulfate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ferric Sulfate	0.00	0.00	165.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	165.47
Ferrous Sulfate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Iron Chelate	0.00	0.00	2.80	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	4.22
Iron compound	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Liquid Amm Polyphosphat	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1607.75
Mangesium Chelate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Manganese Chelate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Manganese Sulfate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mixed Grades	0.00	0.00	2520.81	0.23	0.00	0.00	0.00	0.01	0.10	231.95	0.03	228.41	0.00	114.90	4844.21
Mult. Nutrient-Code/Grade	0.00	0.00	232.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	131.95	385.88
Nitric Acid	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	3.10	0.00	0.00	0.00	0.00	3.15
Phosphate Prod. Code Unk	0.00	0.00	86.97	0.00	0.00	162.89	0.00	0.00	0.00	109.51	0.00	0.00	0.00	0.00	2220.06
Zinc Chelate	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	5.64
Zinc Sulfate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	2562.09	0.10	24501.63	77.70	1788.91	576.00	1208.48	5397.46	4335.73	14347.92	246.03	1805.53	156.01	3965.66	103637.32

Table F-6 Average Fertilizer Consumption (tons) by County
1992, 1993, 1994

Fertilizer Types	Beaver	Box Elder	Cache	Carbon	Daggett	Duchesne	Davis	Emery	Garfield	Grand	Iron	Juab	Kane	Millard	Morgan
Nitrogen															
Ammonium Nitrate	224.21	7114.09	4348.81	257.57	108.54	1503.88	697.82	377.54	0.00	0.00	170.81	515.08	0.00	1829.99	974.90
Ammonium Sulfate	82.13	1379.46	238.72	13.77	0.00	207.55	327.49	0.91	0.34	0.00	24.65	0.00	5.27	594.95	30.21
Anhydrous Ammonia	0.00	1210.68	104.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	357.62	0.00	0.00	0.00	0.00
Calcium Nitrate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Nitrogen Solution 28%	0.00	26.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Nitrogen Solution 30%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Nitrogen Solution 32%	91.39	3237.59	234.80	0.00	0.00	3.32	136.65	112.35	0.00	0.00	0.28	23.21	0.00	732.96	0.00
Sodium Nitrate	0.00	15.65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50	0.00	0.00	0.00	0.00	0.00
Sulfur coated Urea	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Urea	0.00	55.21	1298.10	0.00	0.00	267.51	0.00	0.00	0.00	0.00	0.00	18.88	0.00	0.00	0.00
Phosphate															
Superphosphate, Triple	260.93	0.00	167.05	0.00	0.00	1066.35	29.78	97.29	0.00	0.00	22.01	1336.60	0.00	1617.46	17.78
Potash															
Murite of Potash 60%	0.00	194.66	266.83	0.00	0.00	243.10	1364.25	0.00	0.00	0.00	0.00	1.13	0.00	16.60	224.40
Potassium Sulfate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Multiple Nutrient															
Ammonium Phosphate Sulf	26.77	0.00	0.00	0.36	0.00	0.00	0.00	0.00	0.00	0.00	0.35	0.00	0.00	0.00	0.00
Diammonium Phosphate	0.00	0.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Epson Salt	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Gypsum (Calcium Sulfate)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lime Product - Code Unk.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Monoammonium Phosphat	613.44	938.87	428.67	153.14	24.82	730.71	657.89	0.00	0.00	0.00	61.28	48.93	0.00	1816.07	68.57
Potash - Not Identified	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Potassium Nitrate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sulfur	20.71	0.00	8.95	0.00	0.00	96.15	228.92	0.00	0.00	29.76	0.00	0.04	0.00	67.02	0.00
Unknown															
Ammonium Thiosulfate	46.99	410.69	8.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Borax	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Calcium Chelate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Manure	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Copper Sulfate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ferric Sulfate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ferrous Sulfate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Iron Chelate	0.00	0.00	0.00	0.00	0.00	2.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Iron compound	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Liquid Amm Polyphosphat	0.00	1034.23	391.59	0.00	0.00	0.00	34.79	0.00	0.00	0.00	0.00	0.00	0.00	270.55	0.00
Mangesium Chelate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Manganese Chelate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Manganese Sulfate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mixed Grades	0.00	105.78	6.10	0.00	0.00	20.02	623.52	0.32	0.00	0.50	327.17	0.00	0.09	4.96	0.00
Mult. Nutrient-Code/Grade	0.00	0.00	0.00	0.00	0.00	43.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Nitric Acid	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phosphate Prod. Code Unk	773.50	302.08	488.76	0.00	0.00	0.15	0.00	229.01	0.00	0.00	0.00	137.68	0.00	211.31	104.59
Zinc Chelate	0.00	0.00	0.00	0.00	0.00	0.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Zinc Sulfate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	2140.07	16026.83	7990.69	424.85	133.36	4184.87	4101.12	817.42	0.34	30.76	964.19	2081.55	5.36	7161.86	1420.45

Table F-6 Average Fertilizer Consumption (tons) by County (Continued)
1992, 1993, 1994

Fertilizer Types	Piute	Rich	Salt Lake	San Juan	Sanpete	Sevier	Summit	Tooele	Uintah	Utah	Wasatch	Washington	Wayne	Weber	Statewide Total
Nitrogen															
Ammonium Nitrate	54.17	0.00	2830.38	0.00	711.21	692.88	1355.03	883.95	809.24	5376.10	143.62	416.22	141.31	1766.19	33303.5657
Ammonium Sulfate	0.00	0.00	3501.89	0.00	26.36	2.84	4.49	4109.69	515.23	3536.46	93.86	94.56	0.00	47.00	14837.8308
Anhydrous Ammonia	0.00	0.00	245.00	0.00	0.00	0.00	0.00	0.00	380.04	0.00	0.00	0.00	0.00	0.00	2297.61324
Calcium Nitrate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
Nitrogen Solution 28%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	16.62	0.00	43.49002
Nitrogen Solution 30%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.67	0.00	0.00	0.00	0.00	9.67224
Nitrogen Solution 32%	0.00	0.00	80.90	0.00	624.18	85.53	0.00	0.00	737.16	2021.73	0.00	45.99	0.00	0.00	8168.04946
Sodium Nitrate	0.00	0.00	301.45	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	317.71222
Sulfur coated Urea	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
Urea	0.00	0.00	4404.54	111.32	0.00	0.00	1.00	0.00	0.00	307.08	0.00	5.11	0.00	13.55	6482.30866
Phosphate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
Superphosphate, Triple	0.00	0.00	670.40	0.00	575.75	0.00	0.00	0.00	617.13	38.68	72.56	43.84	17.40	1490.14	8141.14275
Potash	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
Murite of Potash 60%	0.00	0.00	275.09	0.00	164.45	64.73	0.00	0.00	0.00	679.38	0.00	0.00	0.00	264.45	3759.066
Potassium Sulfate	0.00	0.00	2.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.64146733
Multiple Nutrient	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
Ammonium Phosphate Sulf	25.71	0.00	1.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	73.15	0.00	0.00	127.458281
Diammonium Phosphate	0.00	0.00	1899.40	0.00	0.00	0.00	0.00	0.00	383.38	84.43	0.00	330.55	0.00	75.93	2774.64284
Epson Salt	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
Gypsum (Calcium Sulfate)	0.00	0.00	10289.94	0.00	360.48	0.00	0.00	378.46	0.00	0.00	0.00	302.83	0.00	0.00	11331.7103
Lime Product - Code Unk.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
Monoammonium Phosphat	66.53	0.00	0.00	0.00	65.71	0.00	0.00	0.00	636.16	2555.03	0.00	305.58	0.00	0.00	9171.42314
Potash - Not Identified	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
Potassium Nitrate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
Sulfur	0.00	0.00	559.16	0.00	0.17	0.00	0.00	0.00	0.00	93.80	0.00	143.07	0.00	0.00	1247.76238
Unknown	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
Ammonium Thiosulfate	0.00	0.00	58.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	524.628033
Borax	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
Calcium Chelate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
Manure	0.00	0.00	258.89	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	258.885767
Copper Sulfate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
Ferric Sulfate	0.00	0.00	82.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	82.7349333
Ferrous Sulfate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
Iron Chelate	0.00	0.00	5.61	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	7.68637267
Iron compound	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
Liquid Amm Polyphosphat	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1731.15773
Mangesium Chelate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
Manganese Chelate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
Manganese Sulfate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
Mixed Grades	0.00	0.00	2759.49	100.53	0.00	0.00	365.69	0.00	0.10	228.78	0.00	239.59	0.00	119.21	4901.85129
Mult. Nutrient-Code/Grade	0.00	0.00	464.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	263.90	771.708936
Nitric Acid	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	1.55	0.00	0.00	0.00	0.00	1.57343833
Phosphate Prod. Code Unk	0.00	0.00	128.04	0.00	0.00	325.77	0.00	0.00	0.00	219.01	0.00	0.00	0.00	0.00	2919.90425
Zinc Chelate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.86271367
Zinc Sulfate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
TOTAL	146.42	0.00	28820.05	211.85	2528.42	1171.79	1726.21	5372.11	4078.44	15151.71	310.04	2000.49	175.33	4040.51	113217.083

Table F-7 Total Nitrogen Content (tons N) by County
1991, 1992, 1993

Fertilizer Types	% Nitrogen Content	Content Ref.	Beaver	Box Elder	Cache	Carbon	Daggett	Duchesne	Davis	Emery	Garfield	Grand	Iron	Juab	Kane	Millard	Morgan
Nitrogen																	
Ammonium Nitrate	33.50	EPA	35.35	2075.95	1138.53	87.29	36.36	482.97	287.55	97.70	0.00	0.00	59.53	152.15	0.00	515.20	318.79
Ammonium Sulfate	21.00	EPA	14.70	211.98	39.35	3.09	0.01	44.55	40.34	0.00	0.13	0.00	0.33	0.03	0.87	78.39	9.46
Anhydrous Ammonia	82.00	EPA	0.00	1309.39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Calcium Nitrate	15.00	EPA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Nitrogen Solution 28%	28.00	EPA	0.00	7.52	2.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Nitrogen Solution 30%	30.00	EPA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Nitrogen Solution 32%	32.00	EPA	29.25	1245.31	87.64	0.00	0.00	1.06	44.02	13.96	0.00	0.00	0.09	0.00	0.00	196.36	0.00
Sodium Nitrate	16.00	EPA	0.00	2.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sulfur coated Urea	38.00	EPA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Urea	46.00	EPA	0.01	17.74	571.29	0.04	0.00	87.50	0.02	0.01	0.02	0.00	0.03	14.01	0.02	0.20	0.01
Phosphate																	
Superphosphate, Triple	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Potash																	
Murite of Potash 60%	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Potassium Sulfate	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Multiple Nutrient																	
Ammonium Phosphate Sulfate	14.50	EPA	7.76	0.00	0.00	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00
Diammonium Phosphate	18.50	EPA	0.00	0.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Epson Salt	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Gypsum (Calcium Sulfate)	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lime Product - Code Unk.	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Monoammonium Phosphate	11.00	EPA	49.46	114.56	67.22	8.42	1.37	88.10	53.62	0.00	0.00	0.00	13.48	6.97	0.00	124.39	15.09
Potash - Not Identified	15.00	EPA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Potassium Nitrate	13.00	EPA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sulfur	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Unknown																	
Ammonium Thiosulfate	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Borax	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Calcium Chelate	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Manure	5.00	UDADPI	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Copper Sulfate	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ferric Sulfate	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ferrous Sulfate	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Iron Chelate	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Iron compound	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Liquid Amm Polyphosphate	11.00	UDADPI	0.00	82.26	72.06	0.00	0.00	0.00	7.65	0.00	0.00	0.00	0.00	0.00	0.00	14.88	0.00
Mangesium Chelate	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Manganese Chelate	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Manganese Sulfate	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mixed Grades	17.20	WGGE	0.01	18.24	1.14	0.00	0.00	5.89	107.25	0.07	0.00	0.00	166.96	0.01	0.02	1.04	0.00
Mult. Nutrient-Code/Grade U	14.20	TVA	0.00	0.00	0.00	0.00	0.00	3.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Nitric Acid	33.00	UDADPI	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phosphate Prod. Code Unk.	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Zinc Chelate	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Zinc Sulfate	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL			136.54	5085.82	1979.52	98.95	37.74	713.15	540.45	111.74	0.15	0.00	240.53	173.16	0.90	930.47	343.34

Table F-7 Total Nitrogen Content (tons N) by County
1991, 1992, 1993

Fertilizer Types	% Nitrogen Content	Content Ref.	Piute	Rich	Salt Lake	San Juan	Sanpete	Sevier	Summit	Tooele	Uintah	Utah	Wasatch	Washington	Wayne	Weber	State Total N 1990
Nitrogen																	
Ammonium Nitrate	33.50	EPA	6.33	0.00	928.20	0.00	193.30	137.58	403.18	294.88	210.55	1436.52	48.88	208.19	52.26	564.45	9805.19
Ammonium Sulfate	21.00	EPA	0.01	0.02	614.13	0.29	1.00	0.49	0.80	862.51	151.89	1227.61	20.94	12.26	0.00	20.87	3377.04
Anhydrous Ammonia	82.00	EPA	0.00	0.00	76.60	0.00	0.00	0.00	0.00	0.00	309.16	44.92	0.00	0.00	0.00	0.00	1822.06
Calcium Nitrate	15.00	EPA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	15.00
Nitrogen Solution 28%	28.00	EPA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	37.81
Nitrogen Solution 30%	30.00	EPA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	30.00
Nitrogen Solution 32%	32.00	EPA	0.00	0.00	29.75	0.00	199.74	0.00	0.19	0.00	327.29	499.06	0.00	2.13	0.00	0.00	2707.84
Sodium Nitrate	16.00	EPA	0.00	0.00	0.03	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	18.55
Sulfur coated Urea	38.00	EPA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	38.00
Urea	46.00	EPA	0.00	0.00	2236.83	34.99	0.00	0.03	0.23	1.48	0.03	139.08	0.16	0.13	0.00	0.29	3150.17
Phosphate																	
Superphosphate, Triple	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Potash																	
Murite of Potash 60%	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Potassium Sulfate	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Multiple Nutrient																	
Ammonium Phosphate Sulfat	14.50	EPA	3.73	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	21.21	0.00	0.00	47.49
Diammonium Phosphate	18.50	EPA	0.00	0.00	243.50	0.00	0.00	0.00	0.00	0.00	35.46	12.65	0.00	30.58	0.00	28.09	369.14
Epson Salt	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Gypsum (Calcium Sulfate)	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lime Product - Code Unk.	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Monoammonium Phosphate	11.00	EPA	3.66	0.00	0.00	0.00	3.61	0.00	0.00	0.00	85.27	178.39	0.00	39.12	0.00	0.00	863.71
Potash - Not Identified	15.00	EPA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	15.00
Potassium Nitrate	13.00	EPA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.00
Sulfur	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Unknown																	
Ammonium Thiosulfate	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Borax	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Calcium Chelate	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Manure	5.00	UDADPI	0.00	0.00	16.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	21.81
Copper Sulfate	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ferric Sulfate	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ferrous Sulfate	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Iron Chelate	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Iron compound	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Liquid Amm Polyphosphate	11.00	UDADPI	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	187.85
Mangesium Chelate	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Manganese Chelate	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Manganese Sulfate	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mixed Grades	17.20	WGGE	0.00	0.00	433.58	0.04	0.00	0.00	0.00	0.00	0.02	39.90	0.00	39.29	0.00	19.76	850.40
Mult. Nutrient-Code/Grade U	14.20	TVA	0.00	0.00	32.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	18.74	68.99
Nitric Acid	33.00	UDADPI	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	1.02	0.00	0.00	0.00	0.00	34.04
Phosphate Prod. Code Unk.	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Zinc Chelate	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Zinc Sulfate	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL			13.72	0.02	4612.51	35.33	397.67	138.10	404.40	1158.87	1119.66	3579.14	69.98	352.90	52.26	652.20	22979.22

Table F-8 Total Nitrogen Content (tons N) by County
1992, 1993, 1994

Fertilizer Types	% Nitrogen Content	Content Ref.	Beaver	Box Elder	Cache	Carbon	Daggett	Duchesne	Davis	Emery	Garfield	Grand	Iron	Juab	Kane	Millard	Morgan
Nitrogen																	
Ammonium Nitrate	33.50	EPA	75.11	2383.22	1456.85	86.29	36.36	503.80	233.77	126.48	0.00	0.00	57.22	172.55	0.00	613.05	326.59
Ammonium Sulfate	21.00	EPA	17.25	289.69	50.13	2.89	0.00	43.59	68.77	0.19	0.07	0.00	5.18	0.00	1.11	124.94	6.34
Anhydrous Ammonia	82.00	EPA	0.00	992.76	85.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	293.25	0.00	0.00	0.00	0.00
Calcium Nitrate	15.00	EPA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Nitrogen Solution 28%	28.00	EPA	0.00	7.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Nitrogen Solution 30%	30.00	EPA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Nitrogen Solution 32%	32.00	EPA	29.25	1036.03	75.14	0.00	0.00	1.06	43.73	35.95	0.00	0.00	0.09	7.43	0.00	234.55	0.00
Sodium Nitrate	16.00	EPA	0.00	2.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.00
Sulfur coated Urea	38.00	EPA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Urea	46.00	EPA	0.00	25.40	597.13	0.00	0.00	123.06	0.00	0.00	0.00	0.00	0.00	8.68	0.00	0.00	0.00
Phosphate																	
Superphosphate, Triple	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Potash																	
Murite of Potash 60%	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Potassium Sulfate	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Multiple Nutrient																	
Ammonium Phosphate Sulfat	14.50	EPA	3.88	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00
Diammonium Phosphate	18.50	EPA	0.00	0.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Epson Salt	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Gypsum (Calcium Sulfate)	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lime Product - Code Unk.	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Monoammonium Phosphate	11.00	EPA	67.48	103.28	47.15	16.85	2.73	80.38	72.37	0.00	0.00	0.00	6.74	5.38	0.00	199.77	7.54
Potash - Not Identified	15.00	EPA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Potassium Nitrate	13.00	EPA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sulfur	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Unknown																	
Ammonium Thiosulfate	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Borax	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Calcium Chelate	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Manure	5.00	UDADPI	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Copper Sulfate	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ferric Sulfate	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ferrous Sulfate	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Iron Chelate	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Iron compound	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Liquid Amm Polyphosphate	11.00	UDADPI	0.00	113.77	43.07	0.00	0.00	0.00	3.83	0.00	0.00	0.00	0.00	0.00	0.00	29.76	0.00
Mangesium Chelate	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Manganese Chelate	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Manganese Sulfate	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mixed Grades	17.20	WGGE	0.00	18.19	1.05	0.00	0.00	3.44	107.25	0.05	0.00	0.09	56.27	0.00	0.02	0.85	0.00
Mult. Nutrient-Code/Grade U	14.20	TVA	0.00	0.00	0.00	0.00	0.00	6.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Nitric Acid	33.00	UDADPI	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phosphate Prod. Code Unk.	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Zinc Chelate	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Zinc Sulfate	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL			192.96	4972.53	2356.02	106.08	39.09	761.49	529.71	162.67	0.07	0.17	418.80	194.04	1.12	1202.91	340.48

Table F-8 Total Nitrogen Content (tons N) by County
1992, 1993, 1994

Fertilizer Types	% Nitrogen Content	Content Ref.	Piute	Rich	Salt Lake	San Juan	Sanpete	Sevier	Summit	Tooele	Uintah	Utah	Wasatch	Washington	Wayne	Weber	State Total N 1993
Nitrogen																	
Ammonium Nitrate	33.50	EPA	18.15	0.00	948.18	0.00	238.26	232.11	453.94	296.12	271.10	1800.99	48.11	139.43	47.34	591.67	11190.19
Ammonium Sulfate	21.00	EPA	0.00	0.00	735.40	0.00	5.54	0.60	0.94	863.04	108.20	742.66	19.71	19.86	0.00	9.87	3136.94
Anhydrous Ammonia	82.00	EPA	0.00	0.00	200.90	0.00	0.00	0.00	0.00	0.00	311.64	0.00	0.00	0.00	0.00	0.00	1966.04
Calcium Nitrate	15.00	EPA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	15.00
Nitrogen Solution 28%	28.00	EPA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.65	0.00	40.18
Nitrogen Solution 30%	30.00	EPA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.90	0.00	0.00	0.00	0.00	32.90
Nitrogen Solution 32%	32.00	EPA	0.00	0.00	25.89	0.00	199.74	27.37	0.00	0.00	235.89	646.95	0.00	14.72	0.00	0.00	2645.78
Sodium Nitrate	16.00	EPA	0.00	0.00	48.23	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	66.83
Sulfur coated Urea	38.00	EPA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	38.00
Urea	46.00	EPA	0.00	0.00	2026.09	51.21	0.00	0.00	0.46	0.00	0.00	141.26	0.00	2.35	0.00	6.23	3027.86
Phosphate																	
Superphosphate, Triple	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Potash																	
Murite of Potash 60%	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Potassium Sulfate	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Multiple Nutrient																	
Ammonium Phosphate Sulfat	14.50	EPA	3.73	0.00	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.61	0.00	0.00	32.98
Diammonium Phosphate	18.50	EPA	0.00	0.00	351.39	0.00	0.00	0.00	0.00	0.00	70.93	15.62	0.00	61.15	0.00	14.05	531.81
Epson Salt	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Gypsum (Calcium Sulfate)	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lime Product - Code Unk.	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Monoammonium Phosphate	11.00	EPA	7.32	0.00	0.00	0.00	7.23	0.00	0.00	0.00	69.98	281.05	0.00	33.61	0.00	0.00	1019.86
Potash - Not Identified	15.00	EPA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	15.00
Potassium Nitrate	13.00	EPA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.00
Sulfur	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Unknown																	
Ammonium Thiosulfate	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Borax	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Calcium Chelate	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Manure	5.00	UDADPI	0.00	0.00	12.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	17.94
Copper Sulfate	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ferric Sulfate	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ferrous Sulfate	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Iron Chelate	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Iron compound	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Liquid Amm Polyphosphate	11.00	UDADPI	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	201.43
Mangesium Chelate	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Manganese Chelate	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Manganese Sulfate	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mixed Grades	17.20	WGGE	0.00	0.00	474.63	17.29	0.00	0.00	62.90	0.00	0.02	39.35	0.00	41.21	0.00	20.50	860.32
Mult. Nutrient-Code/Grade U	14.20	TVA	0.00	0.00	65.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	37.47	123.78
Nitric Acid	33.00	UDADPI	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.51	0.00	0.00	0.00	0.00	33.52
Phosphate Prod. Code Unk.	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Zinc Chelate	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Zinc Sulfate	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL			29.19	0.00	4889.77	68.50	450.78	260.08	518.24	1159.16	1067.74	3671.30	67.82	322.94	51.99	679.80	24515.47

Table F-9 Tons of N20-N by County 1991, 1992, 1993
(Tons N *0.0117)

Fertilizer Types	Beaver	Box Elder	Cache	Carbon	Daggett	Duchesne	Davis	Emery	Garfield	Grand	Iron	Juab	Kane	Millard	Morgan
Nitrogen															
Ammonium Nitrate	0.41	24.29	13.32	1.02	0.43	5.65	3.36	1.14	0.00	0.00	0.70	1.78	0.00	6.03	3.73
Ammonium Sulfate	0.17	2.48	0.46	0.04	0.00	0.52	0.47	0.00	0.00	0.00	0.00	0.00	0.01	0.92	0.11
Anhydrous Ammonia	0.00	15.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Calcium Nitrate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Nitrogen Solution 28%	0.00	0.09	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Nitrogen Solution 30%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Nitrogen Solution 32%	0.34	14.57	1.03	0.00	0.00	0.01	0.52	0.16	0.00	0.00	0.00	0.00	0.00	2.30	0.00
Sodium Nitrate	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sulfur coated Urea	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Urea	0.00	0.21	6.68	0.00	0.00	1.02	0.00	0.00	0.00	0.00	0.00	0.16	0.00	0.00	0.00
Phosphate															
Superphosphate, Triple	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Potash															
Murite of Potash 60%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Potassium Sulfate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Multiple Nutrient															
Ammonium Phosphate Sulfate	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Diammonium Phosphate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Epson Salt	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Gypsum (Calcium Sulfate)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lime Product - Code Unk.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Monoammonium Phosphate	0.58	1.34	0.79	0.10	0.02	1.03	0.63	0.00	0.00	0.00	0.16	0.08	0.00	1.46	0.18
Potash - Not Identified	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Potassium Nitrate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sulfur	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Unknown															
Ammonium Thiosulfate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Borax	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Calcium Chelate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Manure	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Copper Sulfate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ferric Sulfate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ferrous Sulfate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Iron Chelate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Iron compound	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Liquid Amm Polyphosphate	0.00	0.96	0.84	0.00	0.00	0.00	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.17	0.00
Mangesium Chelate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Manganese Chelate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Manganese Sulfate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mixed Grades	0.00	0.21	0.01	0.00	0.00	0.07	1.25	0.00	0.00	0.00	1.95	0.00	0.00	0.01	0.00
Mult. Nutrient-Code/Grade Un	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Nitric Acid	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phosphate Prod. Code Unk.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Zinc Chelate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Zinc Sulfate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	1.60	59.50	23.16	1.16	0.44	8.34	6.32	1.31	0.00	0.00	2.81	2.03	0.01	10.89	4.02

Table F-9 Tons of N20-N by County 1991, 1992, 1993(continued)
(Tons N *0.0117)

Fertilizer Types	Piute	Rich	Salt Lake	San Juan	Sanpete	Sevier	Summit	Tooele	Uintah	Utah	Wasatch	Washington	Wayne	Weber	State Total 1990
Nitrogen															
Ammonium Nitrate	0.07	0.00	10.86	0.00	2.26	1.61	4.72	3.45	2.46	16.81	0.57	2.44	0.61	6.60	114.33
Ammonium Sulfate	0.00	0.00	7.19	0.00	0.01	0.01	0.01	10.09	1.78	14.36	0.24	0.14	0.00	0.24	39.27
Anhydrous Ammonia	0.00	0.00	0.90	0.00	0.00	0.00	0.00	0.00	3.62	0.53	0.00	0.00	0.00	0.00	20.36
Calcium Nitrate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Nitrogen Solution 28%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11
Nitrogen Solution 30%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Nitrogen Solution 32%	0.00	0.00	0.35	0.00	2.34	0.00	0.00	0.00	3.83	5.84	0.00	0.02	0.00	0.00	31.31
Sodium Nitrate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03
Sulfur coated Urea	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Urea	0.00	0.00	26.17	0.41	0.00	0.00	0.00	0.02	0.00	1.63	0.00	0.00	0.00	0.00	36.32
Phosphate															
Superphosphate, Triple	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Potash															
Murite of Potash 60%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Potassium Sulfate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Multiple Nutrient															
Ammonium Phosphate Sulfate	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.00	0.00	0.39
Diammonium Phosphate	0.00	0.00	2.85	0.00	0.00	0.00	0.00	0.00	0.41	0.15	0.00	0.36	0.00	0.33	4.10
Epson Salt	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Gypsum (Calcium Sulfate)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lime Product - Code Unk.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Monoammonium Phosphate	0.04	0.00	0.00	0.00	0.04	0.00	0.00	0.00	1.00	2.09	0.00	0.46	0.00	0.00	9.98
Potash - Not Identified	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Potassium Nitrate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sulfur	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Unknown															
Ammonium Thiosulfate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Borax	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Calcium Chelate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Manure	0.00	0.00	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20
Copper Sulfate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ferric Sulfate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ferrous Sulfate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Iron Chelate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Iron compound	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Liquid Amm Polyphosphate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.07
Mangesium Chelate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Manganese Chelate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Manganese Sulfate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mixed Grades	0.00	0.00	5.07	0.00	0.00	0.00	0.00	0.00	0.00	0.47	0.00	0.46	0.00	0.23	9.75
Mult. Nutrient-Code/Grade Un	0.00	0.00	0.39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.22	0.64
Nitric Acid	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.01
Phosphate Prod. Code Unk.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Zinc Chelate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Zinc Sulfate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.16	0.00	53.97	0.41	4.65	1.62	4.73	13.56	13.10	41.88	0.82	4.13	0.61	7.63	268.86

Table F-10 Tons of N20-N by County 1992, 1993, 1994
(Tons N *0.0117)

Fertilizer Types	Beaver	Box Elder	Cache	Carbon	Daggett	Duchesne	Davis	Emery	Garfield	Grand	Iron	Juab	Kane	Millard	Morgan
Nitrogen															
Ammonium Nitrate	0.88	27.88	17.05	1.01	0.43	5.89	2.74	1.48	0.00	0.00	0.67	2.02	0.00	7.17	3.82
Ammonium Sulfate	0.20	3.39	0.59	0.03	0.00	0.51	0.80	0.00	0.00	0.00	0.06	0.00	0.01	1.46	0.07
Anhydrous Ammonia	0.00	11.62	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.43	0.00	0.00	0.00	0.00
Calcium Nitrate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Nitrogen Solution 28%	0.00	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Nitrogen Solution 30%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Nitrogen Solution 32%	0.34	12.12	0.88	0.00	0.00	0.01	0.51	0.42	0.00	0.00	0.00	0.09	0.00	2.74	0.00
Sodium Nitrate	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sulfur coated Urea	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Urea	0.00	0.30	6.99	0.00	0.00	1.44	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00
Phosphate															
Superphosphate, Triple	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Potash															
Murite of Potash 60%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Potassium Sulfate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Multiple Nutrient															
Ammonium Phosphate Sulfate	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Diammonium Phosphate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Epson Salt	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Gypsum (Calcium Sulfate)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lime Product - Code Unk.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Monoammonium Phosphate	0.79	1.21	0.55	0.20	0.03	0.94	0.85	0.00	0.00	0.00	0.08	0.06	0.00	2.34	0.09
Potash - Not Identified	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Potassium Nitrate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sulfur	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Unknown															
Ammonium Thiosulfate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Borax	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Calcium Chelate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Manure	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Copper Sulfate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ferric Sulfate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ferrous Sulfate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Iron Chelate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Iron compound	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Liquid Amm Polyphosphate	0.00	1.33	0.50	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.35	0.00
Mangesium Chelate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Manganese Chelate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Manganese Sulfate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mixed Grades	0.00	0.21	0.01	0.00	0.00	0.04	1.25	0.00	0.00	0.00	0.66	0.00	0.00	0.01	0.00
Mult. Nutrient-Code/Grade Un	0.00	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Nitric Acid	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phosphate Prod. Code Unk.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Zinc Chelate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Zinc Sulfate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	2.26	58.18	27.57	1.24	0.46	8.91	6.20	1.90	0.00	0.00	4.90	2.27	0.01	14.07	3.98

Table F-10 Tons of N20-N by County 1992,1993,1994 (continued)
(Tons N *0.0117)

Fertilizer Types	Piute	Rich	Salt Lake	San Juan	Sanpete	Sevier	Summit	Tooele	Uintah	Utah	Wasatch	Washington	Wayne	Weber	State Total 1993
Nitrogen															
Ammonium Nitrate	0.21	0.00	11.09	0.00	2.79	2.72	5.31	3.46	3.17	21.07	0.56	1.63	0.55	6.92	130.53
Ammonium Sulfate	0.00	0.00	8.60	0.00	0.06	0.01	0.01	10.10	1.27	8.69	0.23	0.23	0.00	0.12	36.46
Anhydrous Ammonia	0.00	0.00	2.35	0.00	0.00	0.00	0.00	0.00	3.65	0.00	0.00	0.00	0.00	0.00	22.04
Calcium Nitrate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Nitrogen Solution 28%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.14
Nitrogen Solution 30%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.03
Nitrogen Solution 32%	0.00	0.00	0.30	0.00	2.34	0.32	0.00	0.00	2.76	7.57	0.00	0.17	0.00	0.00	30.58
Sodium Nitrate	0.00	0.00	0.56	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.59
Sulfur coated Urea	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Urea	0.00	0.00	23.71	0.60	0.00	0.00	0.01	0.00	0.00	1.65	0.00	0.03	0.00	0.07	34.89
Phosphate															
Superphosphate, Triple	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Potash															
Murite of Potash 60%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Potassium Sulfate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Multiple Nutrient															
Ammonium Phosphate Sulfate	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.12	0.00	0.00	0.22
Diammonium Phosphate	0.00	0.00	4.11	0.00	0.00	0.00	0.00	0.00	0.83	0.18	0.00	0.72	0.00	0.16	6.01
Epson Salt	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Gypsum (Calcium Sulfate)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lime Product - Code Unk.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Monoammonium Phosphate	0.09	0.00	0.00	0.00	0.08	0.00	0.00	0.00	0.82	3.29	0.00	0.39	0.00	0.00	11.80
Potash - Not Identified	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Potassium Nitrate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sulfur	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Unknown															
Ammonium Thiosulfate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Borax	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Calcium Chelate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Manure	0.00	0.00	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.15
Copper Sulfate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ferric Sulfate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ferrous Sulfate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Iron Chelate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Iron compound	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Liquid Amm Polyphosphate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.23
Mangesium Chelate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Manganese Chelate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Manganese Sulfate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mixed Grades	0.00	0.00	5.55	0.20	0.00	0.00	0.74	0.00	0.00	0.46	0.00	0.48	0.00	0.24	9.86
Mult. Nutrient-Code/Grade Un	0.00	0.00	0.77	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.44	1.28
Nitric Acid	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.01
Phosphate Prod. Code Unk.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Zinc Chelate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Zinc Sulfate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	0.34	0.00	57.21	0.80	5.27	3.04	6.06	13.56	12.49	42.95	0.79	3.78	0.61	7.95	286.83

Table F-11 Tons of N20 by County 1991, 1992, 1993
N20-N * 44/28

Fetilizer Types	Beaver	Box Elder	Cache	Carbon	Daggett	Duchesne	Davis	Emery	Garfield	Grand	Iron	Juab	Kane	Millard	Morgan
Nitrogen															
Ammonium Nitrate	0.65	38.17	20.93	1.60	0.67	8.88	5.29	1.80	0.00	0.00	1.09	2.80	0.00	9.47	5.86
Ammonium Sulfate	0.27	3.90	0.72	0.06	0.00	0.82	0.74	0.00	0.00	0.00	0.01	0.00	0.02	1.44	0.17
Anhydrous Ammonia	0.00	24.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Calcium Nitrate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Nitrogen Solution 28%	0.00	0.14	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Nitrogen Solution 30%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Nitrogen Solution 32%	0.54	22.90	1.61	0.00	0.00	0.02	0.81	0.26	0.00	0.00	0.00	0.00	0.00	3.61	0.00
Sodium Nitrate	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sulfur coated Urea	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Urea	0.00	0.33	10.50	0.00	0.00	1.61	0.00	0.00	0.00	0.00	0.00	0.26	0.00	0.00	0.00
Phosphate															
Superphosphate, Triple	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Potash															
Murite of Potash 60%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Potassium Sulfate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Multiple Nutrient															
Ammonium Phosphate Sulfate	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Diammonium Phosphate	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Epson Salt	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Gypsum (Calcium Sulfate)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lime Product - Code Unk.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Monoammonium Phosphate	0.91	2.11	1.24	0.15	0.03	1.62	0.99	0.00	0.00	0.00	0.25	0.13	0.00	2.29	0.28
Potash - Not Identified	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Potassium Nitrate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sulfur	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Unknown															
Ammonium Thiosulfate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Borax	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Calcium Chelate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Manure	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Copper Sulfate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ferric Sulfate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ferrous Sulfate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Iron Chelate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Iron compound	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Liquid Amm Polyphosphate	0.00	1.51	1.32	0.00	0.00	0.00	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.27	0.00
Mangesium Chelate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Manganese Chelate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Manganese Sulfate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mixed Grades	0.00	0.34	0.02	0.00	0.00	0.11	1.97	0.00	0.00	0.00	3.07	0.00	0.00	0.02	0.00
Mult. Nutrient-Code/Grade Un	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Nitric Acid	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phosphate Prod. Code Unk.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Zinc Chelate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Zinc Sulfate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	2.51	93.51	36.39	1.82	0.69	13.11	9.94	2.05	0.00	0.00	4.42	3.18	0.02	17.11	6.31

Table F-11 Tons of N20 by County 1991, 1992, 1993 (continued)
N20-N * 44/28

Fertilizer Types	Piute	Rich	Salt Lake	San Juan	Sanpete	Sevier	Summit	Tooele	Uintah	Utah	Wasatch	Washington	Wayne	Weber	State Total 1990
Nitrogen															
Ammonium Nitrate	0.12	0.00	17.07	0.00	3.55	2.53	7.41	5.42	3.87	26.41	0.90	3.83	0.96	10.38	179.66
Ammonium Sulfate	0.00	0.00	11.29	0.01	0.02	0.01	0.01	15.86	2.79	22.57	0.38	0.23	0.00	0.38	61.70
Anhydrous Ammonia	0.00	0.00	1.41	0.00	0.00	0.00	0.00	0.00	5.68	0.83	0.00	0.00	0.00	0.00	31.99
Calcium Nitrate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Nitrogen Solution 28%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.18
Nitrogen Solution 30%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Nitrogen Solution 32%	0.00	0.00	0.55	0.00	3.67	0.00	0.00	0.00	6.02	9.18	0.00	0.04	0.00	0.00	49.20
Sodium Nitrate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
Sulfur coated Urea	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Urea	0.00	0.00	41.13	0.64	0.00	0.00	0.00	0.03	0.00	2.56	0.00	0.00	0.00	0.01	57.07
Phosphate															
Superphosphate, Triple	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Potash															
Murite of Potash 60%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Potassium Sulfate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Multiple Nutrient															
Ammonium Phosphate Sulfat	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.39	0.00	0.00	0.61
Diammonium Phosphate	0.00	0.00	4.48	0.00	0.00	0.00	0.00	0.00	0.65	0.23	0.00	0.56	0.00	0.52	6.45
Epson Salt	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Gypsum (Calcium Sulfate)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lime Product - Code Unk.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Monoammonium Phosphate	0.07	0.00	0.00	0.00	0.07	0.00	0.00	0.00	1.57	3.28	0.00	0.72	0.00	0.00	15.68
Potash - Not Identified	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Potassium Nitrate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sulfur	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Unknown															
Ammonium Thiosulfate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Borax	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Calcium Chelate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Manure	0.00	0.00	0.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.31
Copper Sulfate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ferric Sulfate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ferrous Sulfate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Iron Chelate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Iron compound	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Liquid Amm Polyphosphate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.25
Mangesium Chelate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Manganese Chelate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Manganese Sulfate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mixed Grades	0.00	0.00	7.97	0.00	0.00	0.00	0.00	0.00	0.00	0.73	0.00	0.72	0.00	0.36	15.32
Mult. Nutrient-Code/Grade U	0.00	0.00	0.61	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.34	1.01
Nitric Acid	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.02
Phosphate Prod. Code Unk.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Zinc Chelate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Zinc Sulfate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	**0.25**	**0.00**	**84.80**	**0.65**	**7.31**	**2.54**	**7.44**	**21.31**	**20.59**	**65.81**	**1.29**	**6.49**	**0.96**	**11.99**	**422.49**

Table F-12 Tons of N20 by County 1992, 1993, 1994
N20-N * 44/28

Fertilizer Types	Beaver	Box Elder	Cache	Carbon	Daggett	Duchesne	Davis	Emery	Garfield	Grand	Iron	Juab	Kane	Millard	Morgan
Nitrogen															
Ammonium Nitrate	1.38	43.82	26.79	1.59	0.67	9.26	4.30	2.33	0.00	0.00	1.05	3.17	0.00	11.27	6.00
Ammonium Sulfate	0.32	5.33	0.92	0.05	0.00	0.80	1.26	0.00	0.00	0.00	0.10	0.00	0.02	2.30	0.12
Anhydrous Ammonia	0.00	18.25	1.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.39	0.00	0.00	0.00	0.00
Calcium Nitrate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Nitrogen Solution 28%	0.00	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Nitrogen Solution 30%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Nitrogen Solution 32%	0.54	19.05	1.38	0.00	0.00	0.02	0.80	0.66	0.00	0.00	0.00	0.14	0.00	4.31	0.00
Sodium Nitrate	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sulfur coated Urea	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Urea	0.00	0.47	10.98	0.00	0.00	2.26	0.00	0.00	0.00	0.00	0.00	0.16	0.00	0.00	0.00
Phosphate															
Superphosphate, Triple	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Potash															
Murite of Potash 60%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Potassium Sulfate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Multiple Nutrient															
Ammonium Phosphate Sulfate	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Diammonium Phosphate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Epson Salt	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Gypsum (Calcium Sulfate)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lime Product - Code Unk.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Monoammonium Phosphate	1.24	1.90	0.87	0.31	0.05	1.48	1.33	0.00	0.00	0.00	0.12	0.10	0.00	3.67	0.14
Potash - Not Identified	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Potassium Nitrate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sulfur	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Unknown															
Ammonium Thiosulfate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Borax	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Calcium Chelate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Manure	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Copper Sulfate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ferric Sulfate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ferrous Sulfate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Iron Chelate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Iron compound	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Liquid Amm Polyphosphate	0.00	2.09	0.79	0.00	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.55	0.00
Mangesium Chelate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Manganese Chelate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Manganese Sulfate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mixed Grades	0.00	0.33	0.02	0.00	0.00	0.06	1.97	0.00	0.00	0.00	1.03	0.00	0.00	0.02	0.00
Mult. Nutrient-Code/Grade Un	0.00	0.00	0.00	0.00	0.00	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Nitric Acid	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phosphate Prod. Code Unk.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Zinc Chelate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Zinc Sulfate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	3.55	91.42	43.32	1.95	0.72	14.00	9.74	2.99	0.00	0.00	7.70	3.57	0.02	22.12	6.26

Table F-12 Tons of N20 by County 1992, 1993, 1994 (continued)
N20-N * 44/28

Fertilizer Types	Piute	Rich	Salt Lake	San Juan	Sanpete	Sevier	Summit	Tooele	Uintah	Utah	Wasatch	Washington	Wayne	Weber	State Total 1990
Nitrogen															
Ammonium Nitrate	0.33	0.00	17.43	0.00	4.38	4.27	8.35	5.44	4.98	33.11	0.88	2.56	0.87	10.88	205.12
Ammonium Sulfate	0.00	0.00	13.52	0.00	0.10	0.01	0.02	15.87	1.99	13.65	0.36	0.37	0.00	0.18	57.29
Anhydrous Ammonia	0.00	0.00	3.69	0.00	0.00	0.00	0.00	0.00	5.73	0.00	0.00	0.00	0.00	0.00	34.64
Calcium Nitrate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Nitrogen Solution 28%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.00	0.22
Nitrogen Solution 30%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.05
Nitrogen Solution 32%	0.00	0.00	0.48	0.00	3.67	0.50	0.00	0.00	4.34	11.89	0.00	0.27	0.00	0.00	48.06
Sodium Nitrate	0.00	0.00	0.89	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.93
Sulfur coated Urea	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Urea	0.00	0.00	37.25	0.94	0.00	0.00	0.01	0.00	0.00	2.60	0.00	0.04	0.00	0.11	54.82
Phosphate															
Superphosphate, Triple	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Potash															
Murite of Potash 60%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Potassium Sulfate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Multiple Nutrient															
Ammonium Phosphate Sulfat	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.00	0.00	0.34
Diammonium Phosphate	0.00	0.00	6.46	0.00	0.00	0.00	0.00	0.00	1.30	0.29	0.00	1.12	0.00	0.26	9.44
Epson Salt	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Gypsum (Calcium Sulfate)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lime Product - Code Unk.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Monoammonium Phosphate	0.13	0.00	0.00	0.00	0.13	0.00	0.00	0.00	1.29	5.17	0.00	0.62	0.00	0.00	18.55
Potash - Not Identified	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Potassium Nitrate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sulfur	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Unknown															
Ammonium Thiosulfate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Borax	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Calcium Chelate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Manure	0.00	0.00	0.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.24
Copper Sulfate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ferric Sulfate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ferrous Sulfate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Iron Chelate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Iron compound	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Liquid Amm Polyphosphate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.50
Mangesium Chelate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Manganese Chelate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Manganese Sulfate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mixed Grades	0.00	0.00	8.73	0.32	0.00	0.00	1.16	0.00	0.00	0.72	0.00	0.76	0.00	0.38	15.50
Mult. Nutrient-Code/Grade U	0.00	0.00	1.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.69	2.01
Nitric Acid	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.01
Phosphate Prod. Code Unk.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Zinc Chelate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Zinc Sulfate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	0.54	0.00	89.90	1.26	8.29	4.78	9.53	21.31	19.63	67.50	1.25	5.94	0.96	12.50	450.73

Appendix G

Forest Management and Land Use Change

Table G-1 Changes in Forests and Woody Biomass Stock

Forest ID		Predominant Forest Type	Total Forest Acres	Column A	Column B	Column C	Column D	Column E
			(1994 USFS approximation and approximation from state forester, Chas Chandler of Richfield, Utah 896-6494)	Adjusted Area of Biomass/ Forest Stocks in thousands of acres (from forest stocks)	Annual Growth Rate (t dm/acre/yr) (Douglas fir)	(AxB) Annual Biomass Increment (10^3 t dm/yr)	Carbon Fraction of Dry Matter (t C/t dm)	(CxD) Total Carbon Uptake Increment (10^3 t C/yr)
Ashley	1993	evergreen (lodgepole pines)	1,373,200	835	13.5	11278.6	0.512	5774.6
	1992			833	13.5	11249.7	0.512	5759.8
	1991			832	13.5	11231.7	0.512	5750.6
	1990			830	13.5	11210.1	0.512	5739.6
Dixie	1993	evergreen (spruce and pines)	1,883,896	675	13.5	9109.7	0.512	4664.1
	1992			670	13.5	9041.2	0.512	4629.1
	1991			665	13.5	8973.8	0.512	4594.6
	1990			659	13.5	8897.3	0.512	4555.4
Fishlake	1993	evergreen (spruce and pines)	1,424,480	727	13.5	9817.8	0.512	5026.7
	1992			727	13.5	9812.4	0.512	5024.0
	1991			727	13.5	9810.8	0.512	5023.1
	1990			726	13.5	9795.4	0.512	5015.2
Manti-LaSal	1993	evergreen (spruce and pines)	1,334,500	690	13.5	9309.0	0.512	4766.2
	1992			689	13.5	9301.3	0.512	4762.3
	1991			689	13.5	9301.3	0.512	4762.3
	1990			689	13.5	9299.4	0.512	4761.3
Uinta 1993	1993	evergreen (spruce and pines)	836,500	323	13.5	4362.8	0.512	2233.8
	1992			323	13.5	4358.2	0.512	2231.4
	1991			322	13.5	4352.4	0.512	2228.4
	1990			322	13.5	4341.5	0.512	2222.9
Wasatch-Cache	1993	evergreen (spruce and pines)	1,219,700	742	13.5	10019.7	0.512	5130.1
	1992			742	13.5	10014.0	0.512	5127.2
	1991			741	13.5	10008.2	0.512	5124.2
	1990			741	13.5	10007.5	0.512	5123.8
					(may use default values from table 10-1 of USEPA)		(see table 1.2 of Birdsey, 1992 or use default value 0.5)	

Note: 60% of all lumber cut in Utah is spruce. The remaining 40% is dispersed through other woods including: aspen (for Pallets), lodgepole pine, and some ponderosa pine.
Source: Rollie Sayler of Forest Management Intermountain Region USFS.
Future Reference: Utah Aspen Mills of Sigurd, Utah, began heavy processing of Aspens for pallets for years 1994 foward. (1-801-896-6402)

non-forest trees		*Column A* Acreage in urban forest for cities with population > 20,000	*Column B* Annual Growth Rate (see page 10-4) (Loblolly Pine)				
		(10^3 acres)	(t dm/acre/yr)				
	1993	48	9	433.5	0.512	222.0	
	1992	48	9	433.5	0.512	222.0	
	1991	48	9	433.5	0.512	222.0	
	1990	48	9	433.5	0.512	222.0	
			Column E Totals	Total for	27817.5	thousand tons C/yr	
				Total for	27755.7	thousand tons C/yr	
				Total for	27705.1	thousand tons C/yr	
				Total for	27640.2	thousand tons C/yr	
				(these values are used in column P of Worksheet 10-1, sheet 2.)			

Table G-1 Changes in Forests and Woody Biomass Stock

Forest ID		Predominant Forest Type	Total Forest Acres	Column A	Column B	Column C	Column D	Column E
			(1994 USFS approximation and approximation from state forester, Chas Chandler of Richfield, Utah 896-6494)	Adjusted Area of Biomass/ Forest Stocks in thousands of acres (from forest stocks)	Annual Growth Rate (t dm/acre/yr) (Douglas fir)	(AxB) Annual Biomass Increment (10^3 t dm/yr)	Carbon Fraction of Dry Matter (t C/t dm)	(CxD) Total Carbon Uptake Increment (10^3 t C/yr)
Ashley	1993	evergreen (lodgepole pines)	1,373,200	835	13.5	11,278.6	0.512	5,774.6
	1992			833	13.5	11,249.7	0.512	5,759.8
	1991			832	13.5	11,231.7	0.512	5,750.6
	1990			830	13.5	11,210.1	0.512	5,739.6
Dixie	1993	evergreen (spruce and pines)	1,883,896	675	13.5	9,109.7	0.512	4,664.1
	1992			670	13.5	9,041.2	0.512	4,629.1
	1991			665	13.5	8,973.8	0.512	4,594.6
	1990			659	13.5	8,897.3	0.512	4,555.4
Fishlake	1993	evergreen (spruce and pines)	1,424,480	727	13.5	9,817.8	0.512	5,026.7
	1992			727	13.5	9,812.4	0.512	5,024.0
	1991			727	13.5	9,810.8	0.512	5,023.1
	1990			726	13.5	9,795.4	0.512	5,015.2
Manti-LaSal	1993	evergreen (spruce and pines)	1,334,500	690	13.5	9,309.0	0.512	4,766.2
	1992			689	13.5	9,301.3	0.512	4,762.3
	1991			689	13.5	9,301.3	0.512	4,762.3
	1990			689	13.5	9,299.4	0.512	4,761.3
Uinta 1993	1993	evergreen (spruce and pines)	836,500	323	13.5	4,362.8	0.512	2,233.8
	1992			323	13.5	4,358.2	0.512	2,231.4
	1991			322	13.5	4,352.4	0.512	2,228.4
	1990			322	13.5	4,341.5	0.512	2,222.9
Wasatch-Cache	1993	evergreen (spruce and pines)	1,219,700	742	13.5	10,019.7	0.512	5,130.1
	1992			742	13.5	10,014.0	0.512	5,127.2
	1991			741	13.5	10,008.2	0.512	5,124.2
	1990			741	13.5	10,007.5	0.512	5,123.8
					(may use default values from table 10-1 of USEPA)		(see table 1.2 of Birdsey, 1992 or use default value 0.5)	

Note: 60% of all lumber cut in Utah is spruce. The remaining 40% is dispersed through other woods including: aspen (for Pallets), lodgepole pine, and some ponderosa pine.
Source: Rollie Sayler of Forest Management Intermountain Region USFS.
Future Reference: Utah Aspen Mills of Sigurd, Utah, began heavy processing of Aspens for pallets for years 1994 foward. (1-801-896-6402)

non-forest trees

	Column A Acreage in urban forest for cities with population > 20,000 (10^3 acres)	*Column B* Annual Growth Rate (see page 10-4) (Loblolly Pine) (t dm/acre/yr)			
1993	48	9	433.5	0.512	222.0
1992	48	9	433.5	0.512	222.0
1991	48	9	433.5	0.512	222.0
1990	48	9	433.5	0.512	222.0

Column E Totals

Total for 27817.5 thousand tons C/yr
Total for 27755.7 thousand tons C/yr
Total for 27705.1 thousand tons C/yr
Total for 27640.2 thousand tons C/yr
(these values are used in column P of Worksheet 10-1, sheet 2.)

Table G-2 Approximations of Biomass/Forest Stocks

Information provided by Rollie Saylor of Forest Management Intermountain Region gives total forest acres and forest land acres for 1994. These values may be used to approximate forest acreage for 1990 and 1993.

Use equation below (i.e. where for the 1993 year):

(total forest land acres 1994) - (acres planted in 1993 - acres harvested in 1993) = (total forest land in acres for 1993)

year	forest name	Approximation of area of biomass/forest stocks for column A of worksheet 10-1 from Utah USFS office (10^3 acres)	acres planted previous year (10^3 acres)	acres harvested (10^3 acres)	total of previous year (10^3 acres)	net change this year (10^3 acres)
1994	Ashley	836.8	1.350	0.000	835.5	1.350
1993	Ashley	835.5	2.141	0.000	833.3	2.141
1992	Ashley	833.3	1.331	0.000	832.0	1.331
1991	Ashley	832.0	1.601	0.000	830.4	1.601
1990	Ashley	830.4	0.000	0.000	830.4	0.000
1994	Dixie	678.8	5.042	1.032	674.8	4.010
1993	Dixie	674.8	5.903	0.834	669.7	5.069
1992	Dixie	669.7	5.450	0.452	664.7	4.998
1991	Dixie	664.7	6.326	0.664	659.1	5.662
1990	Dixie	659.1	7.354	0.687	652.4	6.667
1994	Fishlake	727.8	0.592	0.056	727.2	0.536
1993	Fishlake	727.2	0.411	0.015	726.8	0.396
1992	Fishlake	726.8	0.247	0.122	726.7	0.125
1991	Fishlake	726.7	1.219	0.078	725.6	1.141
1990	Fishlake	725.6	0.710	0.086	725.0	0.624
1994	Manti-LaSal	689.8	0.316	0.071	689.6	0.245
1993	Manti-LaSal	689.6	0.572	0.000	689.0	0.572
1992	Manti-LaSal	689.0	0.000	0.000	689.0	0.000
1991	Manti-LaSal	689.0	0.167	0.032	688.8	0.135
1990	Manti-LaSal	688.8	0.000	0.000	688.8	0.000
1994	Uinta	323.3	0.155	0.028	323.2	0.127
1993	Uinta	323.2	0.340	0.000	322.8	0.340
1992	Uinta	322.8	0.436	0.000	322.4	0.436
1991	Uinta	322.4	0.802	0.000	321.6	0.802
1990	Uinta	321.6	0.000	0.000	321.6	0.000
1994	Wasatch-Cache	742.3	0.384	0.284	742.2	0.100
1993	Wasatch-Cache	742.2	0.420	0.000	741.8	0.420
1992	Wasatch-Cache	741.8	0.435	0.000	741.3	0.435
1991	Wasatch-Cache	741.3	0.050	0.000	741.3	0.050
1990	Wasatch-Cache	741.3	0.000	0.204	741.5	-0.204

Approximations of Biomass/Forest Stocks linked to Column A of Worksheet 10-1, Sheet 1

	1990	1991	1992	1993
Ashley	830	832	833	835
Dixie	659	665	670	675
Fishlake	726	727	727	727
Manti-LaSal	689	689	689	690
Uinta	322	322	323	323
Wasatch-Cache	741	741	742	742
Totals	3966.758	3976.149	3983.474	3992.412
Annual increase		9	7	9

Table G-3 Greenhouse Gas from Forest Changes (Urban Forest)

City	Square Kilometer	Acres	Percent Acres Forest (18.5%)	Number of Trees	
Logan	37.05	9,155	1,694	707,951	
Bountiful	27.17	6,714	1,242	519,164	
Clearfield	18.96	4,685	867	362,287	
Layton	47.7	11,787	2,181	911,451	
Salt Lake City	287.23	70,974	13,130	5,488,385	
Murray	25.24	6,237	1,154	482,285	
Sandy	52.89	13,069	2,418	1,010,621	
West Jordan	69.5	17,173	3,177	1,328,005	
W Valley City	89.1	22,016	4,073	1,702,521	
Orem	46.32	11,446	2,117	885,082	
Provo	108.4	26,785	4,955	2,071,305	
St George	157.21	38,846	7,187	3,003,966	
Ogden	68.59	16,948	3,135	1,310,616	
Roy	18.4	4,547	841	351,587	
Total			48,170	20,135,226	
		1,000 Acres	48	20,135	**1,000 Trees**

Notes:

1. Percent tree cover for: SLC = 26%, Logan = 11%, Average = 18.5%.
   Percent acres of Forest for each city = 18.5% of total acres in the corporate boundary.
2. Tree density converted from trees/hectare to trees/acre from data provided by Greg McPherson.
3. Number of trees = 418 trees/acre across all urban land uses.