

Appendix 1. Rain gauge UTM coordinates.

	X_COORD	Y_COORD
Upper Saloon Gulch	478658.40639	4349046.72139
Lower Saloon Gulch	480616.00193	4349089.04921
Trumbull	481792.77092	4345672.44002
Spring Creek	479915.21612	4354790.48630
Upper Brush Creek	478686.82469	4348165.22761
Lower Brush Creek	480593.18079	4345695.01971

Appendix 2a. Daily and monthly precipitation in inches in upper Saloon Gulch.

Monthly			Monthly			Monthly		
Date	Daily	total	Date	Daily	total	Date	Daily	total
08/06/01	0.0254		02/01/02	0.0254		08/03/02	0.4064	
08/07/01	0.1016		02/09/02	0.0254		08/04/02	0.1016	
08/08/01	0.3556		02/10/02	0.0762		08/05/02	0.5588	
08/08/01	0.5588		02/12/02	0.0254		08/06/02	0.127	
08/09/01	0.127		02/15/02	0.3048		08/07/02	0.2032	
08/09/01	0.2286		02/19/02	0.0508		08/19/02	0.0508	
08/10/01	0.3302		02/25/02	0.0254		08/21/02	0.381	
08/12/01	0.0254		02/26/02	0.0508	0.5842	08/22/02	0.0254	
08/14/01	0.7112		03/03/02	0.127		08/27/02	0.2794	
08/15/01	0.254		03/04/02	0.2032		08/28/02	0.4826	
08/21/01	0.8128		03/09/02	0.0508		08/29/02	0.0508	
08/22/01	0.2032		03/14/02	0.4064		08/30/02	0.0508	2.7178
08/30/01	0.6096	4.3434	03/15/02	0.0762		9/8/2002	0.2032	
09/01/01	0.3302		03/16/02	0.127		9/9/2002	0.25	
09/07/01	0.3302		03/17/02	0.1016		9/10/2002	0.32	
09/08/01	0.31		03/19/02	0.12		9/12/2002	0.2	
09/13/01	0.08		03/25/02	0.14		9/13/2002	0.05	
09/17/01	0.05	0.7	03/26/02	0.02	0.71	9/18/2002	0.28	
10/05/01	0.01		04/19/02	0.02		9/26/2002	0.16	
10/18/01	0.01	0.02	04/26/02	0.01	0.03	9/27/2002	0.01	1.35
11/07/01	0.12		05/11/02	0.01		10/2/2002	0.64	
11/08/01	0.26		05/12/02	0.22		10/3/2002	0.01	
11/19/01	0.09		05/16/02	0.2		10/23/2002	0.03	
11/22/01	0.01		05/17/02	0.01		10/24/2002	0.01	
11/23/01	0.01		05/20/02	0.07		10/26/2002	0.1	
11/26/01	0.03		05/23/02	0.15		10/27/2002	0.14	
11/28/01	0.01		05/24/02	0.55	1.21	10/30/2002	0.06	
11/29/01	0.14		06/03/02	0.02		10/31/2002	0.11	1.10
11/30/01	0.09	0.76	06/04/02	0.25		11/3/2002	0.04	
12/01/01	0.03		06/14/02	0.01		11/9/2002	0.02	
12/08/01	0.01		06/19/02	0.06		11/15/2002	0.01	
12/12/01	0.03		06/20/02	0.3		11/16/2002	0.01	
12/13/01	0.01		06/21/02	0.18		11/25/2002	0.04	0.12
12/16/01	0.2		06/24/02	0.01	0.83	12/19/2002	0.01	
12/22/01	0.02		07/01/02	0.01		12/20/2002	0.07	
12/23/01	0.03	0.33	07/03/02	0.01		12/23/2002	0.01	0.09
01/01/02	0.01		07/05/02	0.13				
01/02/02	0.03		07/06/02	0.65				
01/05/02	0.08		07/16/02	0.02				
01/10/02	0.14		07/21/02	0.44				
01/24/02	0.21		07/22/02	0.08				
01/30/02	0.02		07/29/02	0.01				
01/31/02	0.04	0.53	07/30/02	0.02	1.37			

Appendix 2 b. Daily and monthly precipitation in inches lower Saloon Gulch.

Monthly			Monthly			Monthly		
Date	Daily	total	Date	Daily	total	Date	Daily	total
08/09/01	0.008		06/03/02	0.04		11/03/02	0.006	
08/15/01	0.002		06/04/02	0.16		11/09/02	0.001	
08/21/01	0.023		06/14/02	0.02		11/12/02	0.001	
08/22/01	0.014		06/19/02	0.23		11/15/02	0.002	
08/30/01	0.005	0.052	06/20/02	0.32		11/16/02	0.001	
09/01/01	0.004		06/21/02	0.11		11/25/02	0.004	0.015
09/07/01	0.024		06/23/02	0.01	0.89	12/19/02	0.001	
09/08/01	0.051		07/05/02	0.09		12/20/02	0.016	
09/13/01	0.004		07/06/02	0.69		12/21/02	0.003	
09/17/01	0.006	0.089	07/21/02	1.22		12/22/02	0.001	
11/07/01	0.01		07/22/02	0.02		12/23/02	0.001	0.022
11/08/01	0.011		07/23/02	0.52				
11/18/01	0.001		07/29/02	0.01				
11/19/01	0.009		07/30/02	0.01	2.560001			
11/22/01	0.001		08/03/02	0.15				
11/23/01	0.005		08/04/02	0.03				
11/26/01	0.002	0.039	08/05/02	0.06				
12/01/01	0.001		08/06/02	0.09				
12/02/01	0.03		08/07/02	0.03				
12/13/01	0.001		08/19/02	0.01				
12/17/01	0.013		08/21/02	0.19				
12/23/01	0.001		08/22/02	0.02				
12/26/01	0.003	0.049	08/27/02	0.1				
01/01/02	0.01		08/28/02	0.05				
01/03/02	0.01		08/29/02	0.05	0.78			
01/04/02	0.01		09/08/02	0.007				
01/05/02	0.04		09/09/02	0.027				
01/10/02	0.1		09/10/02	0.03				
01/11/02	0.02	0.19	09/12/02	0.073				
03/09/02	0.06		09/13/02	0.003				
03/14/02	0.15		09/19/02	0.035				
03/15/02	0.09		09/20/02	0.002				
03/16/02	0.04		09/26/02	0.011	0.188			
03/19/02	0.09		10/01/02	0.053				
03/20/02	0.01		10/02/02	0.004				
03/25/02	0.12	0.56	10/03/02	0.003				
05/11/02	0.01		10/23/02	0.001				
05/12/02	0.1		10/24/02	0.002				
05/16/02	0.17		10/26/02	0.036				
05/20/02	0.02		10/27/02	0.001				
05/23/02	0.15		10/28/02	0.002				
05/24/02	0.38		10/29/02	0.003				
05/27/02	0.02	0.85	10/30/02	0.006				
			10/31/02	0.008	0.119			

Appendix 2c. Daily and monthly precipitation in inches in Trumbull.

Monthly			Monthly			Monthly		
Date	Daily	total	Date	Daily	total	Date	Daily	total
08/06/01	0.02		01/01/02	0.01		09/08/02	0.03	
08/07/01	0.04		01/05/02	0.03		09/09/02	0.17	
08/08/01	0.21		01/10/02	0.1		09/10/02	0.22	
08/09/01	0.14		01/24/02	0.15	0.29	09/12/02	0.25	
08/10/01	0.11		02/27/02	0.02	0.02	09/18/02	0.2	
08/11/01	0.01		03/03/02	0.07		09/19/02	0.02	
08/12/01	0.01		03/04/02	0.06		09/26/02	0.08	
08/13/01	0.04		03/09/02	0.04		09/27/02	0.02	0.99
08/14/01	0.22		03/14/02	0.14		10/01/02	0.4	
08/15/01	0.13		03/15/02	0.06		10/02/02	0.03	
08/16/01	0.02		03/16/02	0.06		10/03/02	0.03	
08/21/01	0.29		03/19/02	0.1		10/24/02	0.07	
08/22/01	0.13		03/25/02	0.16	0.69	10/26/02	0.31	
08/30/01	0.12		05/11/02	0.05		10/27/02	0.01	
08/31/01	0.01	1.5	05/12/02	0.11		10/28/02	0.01	
09/01/01	0.03		05/16/02	0.18		10/29/02	0.04	
09/06/01	0.01		05/18/02	0.01		10/30/02	0.05	
09/07/01	0.22		05/20/02	0.03		10/31/02	0.03	0.98
09/08/01	0.54		05/23/02	0.13		11/01/02	0.01	
09/09/01	0.01		05/24/02	0.26		11/03/02	0.06	
09/13/01	0.03		05/31/02	0.01	0.78	11/09/02	0.01	
09/15/01	0.02		06/03/02	0.01		11/12/02	0.01	
09/17/01	0.11	0.97	06/04/02	0.09		11/15/02	0.02	
10/25/01	0.01	0.01	06/14/02	0.01		11/16/02	0.01	
11/07/01	0.07		06/19/02	0.01		11/25/02	0.03	0.15
11/08/01	0.09		06/20/02	0.2		12/18/02	0.01	
11/09/01	0.01		06/21/02	0.06		12/19/02	0.03	
11/18/01	0.02		06/23/02	0.02	0.4	12/20/02	0.18	
11/19/01	0.07		07/03/02	0.01		12/23/02	0.01	0.23
11/22/01	0.02		07/05/02	0.05				
11/23/01	0.03		07/06/02	0.38				
11/24/01	0.01		07/21/02	0.21				
11/26/01	0.01		07/22/02	0.01				
11/28/01	0.02		07/29/02	0.05	0.71			
11/29/01	0.19		08/03/02	0.26				
11/30/01	0.05	0.59	08/04/02	0.01				
12/12/01	0.02		08/05/02	0.05				
12/16/01	0.11		08/06/02	0.1				
12/22/01	0.08	0.21	08/07/02	0.06				
			08/19/02	0.02				
			08/21/02	0.18				
			08/27/02	0.01				
			08/28/02	0.02	0.71			

Appendix 2d. Daily and monthly precipitation in inches in Spring Creek.

Monthly			Monthly			Monthly		
Date	Daily	total	Date	Daily	total	Date	Daily	total
08/07/01	0.2		01/01/02	0.01		09/08/02	0.03	
08/08/01	0.15		01/02/02	0.03		09/09/02	0.28	
08/09/01	0.01		01/05/02	0.07		09/10/02	0.24	
08/10/01	0.09		01/10/02	0.24		09/12/02	0.23	
08/13/01	1.09		01/24/02	0.22	0.57	09/13/02	0.04	
08/14/01	0.44		03/09/02	0.05		09/18/02	0.39	
08/15/01	0.13		03/14/02	0.14		09/19/02	0.01	
08/16/01	0.02		03/15/02	0.02		09/26/02	0.24	1.46
08/21/01	0.45		03/16/02	0.15		10/01/02	0.5	
08/22/01	0.1		03/19/02	0.09		10/03/02	0.1	
08/30/01	0.32	3	03/25/02	0.17		10/23/02	0.02	
09/01/01	0.06		03/26/02	0.01	0.63	10/26/02	0.11	
09/02/01	0.01		04/11/02	0.01		10/27/02	0.07	
09/05/01	0.09		04/20/02	0.01		10/29/02	0.01	
09/07/01	0.06		04/26/02	0.02		10/30/02	0.05	
09/08/01	0.12		04/27/02	0.01	0.05	10/31/02	0.14	1.00
09/08/01	0.63		05/11/02	0.02		11/01/02	0.03	
09/13/01	0.08		05/12/02	0.13		11/02/02	0.01	
09/14/01	0.01		05/16/02	0.2		11/03/02	0.03	
09/16/01	0.04		05/16/02	0.06		11/09/02	0.04	
09/17/01	0.22		05/17/02	0.01		11/11/02	0.01	
09/22/01	0.01	1.33	05/18/02	0.01		11/12/02	0.01	
10/06/01	0.01	0.01	05/20/02	0.03		11/14/02	0.03	
11/07/01	0.14		05/23/02	0.21		11/15/02	0.03	
11/08/01	0.16		05/23/02	0.21	0.88	11/16/02	0.02	
11/09/01	0.01		06/03/02	0.04		11/25/02	0.03	0.24
11/19/01	0.14		06/04/02	0.41		12/18/02	0.01	
11/22/01	0.01		06/16/02	0.01		12/19/02	0.02	
11/23/01	0.02		06/19/02	0.02		12/20/02	0.16	
11/24/01	0.01		06/20/02	0.04		12/23/02	0.01	
11/26/01	0.04		06/21/02	0.08		12/24/02	0.01	
11/29/01	0.23		06/27/02	0.03	0.63	12/25/02	0.01	0.22
11/30/01	0.04	0.8	07/06/02	0.79				
12/01/01	0.04		07/21/02	0.09				
12/12/01	0.03		07/29/02	0.01	0.89			
12/13/01	0.01		08/04/02	0.17				
12/16/01	0.22		08/05/02	0.12				
12/17/01	0.02		08/06/02	0.05				
12/22/01	0.08	0.4	08/07/02	0.04				
			08/21/02	0.16				
			08/22/02	0.06				
			08/23/02	0.01				
			08/26/02	0.05				
			08/31/02	0.06	0.72			

Appendix 2e. Daily and monthly precipitation in inches in upper Brush Creek.

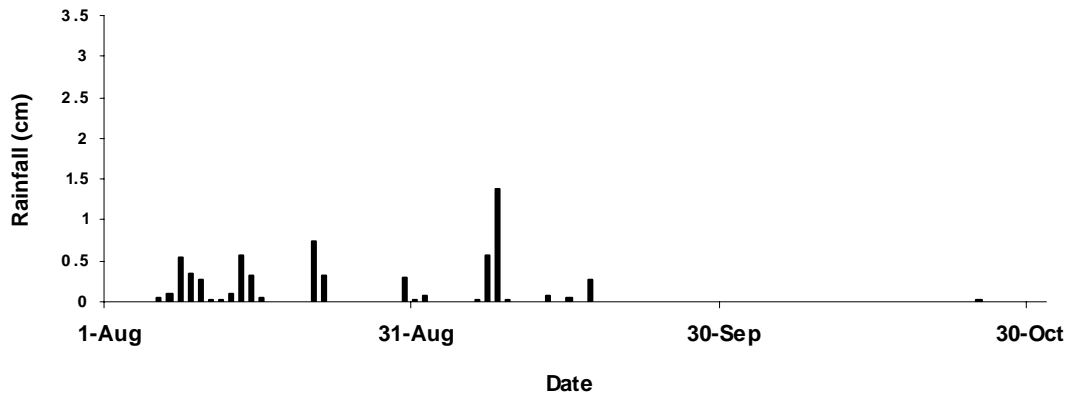
Date	Daily	Monthly total	Date	Daily	Monthly total
10/05/01	0.01		09/08/02	0.12	
10/15/01	0.02		09/09/02	0.34	
10/18/01	0.03		09/10/02	0.39	
10/18/01	0.03	0.09	09/12/02	0.27	
01/30/02	0.03		09/13/02	0.02	
01/31/02	0.07	0.1	09/18/02	0.39	
02/10/02	0.04		09/19/02	0.01	
02/15/02	0.16		09/26/02	0.15	
02/19/02	0.02		09/27/02	0.01	1.7
02/21/02	0.01		10/01/02	0.84	
02/25/02	0.01		10/02/02	0.05	
02/26/02	0.03	0.27	10/03/02	0.04	
03/03/02	0.01		10/23/02	0.04	
03/04/02	0.21		10/24/02	0.03	
03/09/02	0.05		10/26/02	0.15	
03/14/02	0.23		10/27/02	0.21	
03/15/02	0.01		10/30/02	0.01	
03/17/02	0.11		10/31/02	0.33	1.7
03/19/02	0.18		11/03/02	0.06	
03/25/02	0.16		11/09/02	0.02	
03/26/02	0.01	0.97	11/11/02	0.01	
05/11/02	0.02		11/15/02	0.04	
05/12/02	0.27	0.29	11/16/02	0.03	
07/21/02	0.58		11/25/02	0.04	0.2
07/22/02	0.06		12/19/02	0.02	
07/30/02	0.01	0.65	12/20/02	0.21	
08/03/02	0.18		12/23/02	0.01	0.24
08/04/02	0.06				
08/05/02	0.25				
08/06/02	0.05				
08/07/02	0.1				
08/19/02	0.02				
08/21/02	0.18				
08/27/02	0.08				
08/28/02	0.14				
08/29/02	0.05				
08/30/02	0.01	1.12			

Appendix 2f. Daily and monthly precipitation in inches in lower Brush Creek.

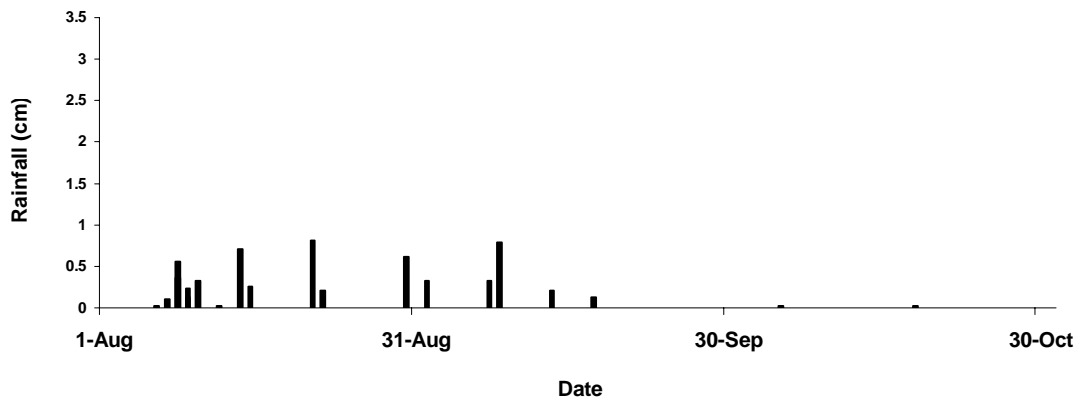
Date	Daily	Monthly total	Date	Daily	Monthly total
11/07/01	0.1		08/03/02	0.32	
11/08/01	0.16		08/04/02	0.01	
11/18/01	0.03		08/05/02	0.12	
11/19/01	0.11		08/06/02	0.09	
11/22/01	0.04		08/07/02	0.08	
11/23/01	0.02		08/08/02	0.02	
11/26/01	0.01		08/19/02	0.03	
11/29/01	0.02	0.49	08/21/02	0.34	
12/01/01	0.1		08/22/02	0.01	
12/02/01	0.13		08/27/02	0.04	
12/17/01	0.15		08/28/02	0.05	1.11
12/28/01	0.03	0.41	09/08/02	0.04	
01/03/02	0.02		09/09/02	0.17	
01/06/02	0.05		09/10/02	0.22	
01/10/02	0.09		09/12/02	0.25	
01/11/02	0.06		09/18/02	0.2	
01/25/02	0.26	0.48	09/19/02	0.02	
03/09/02	0.04		09/20/02	0.02	
03/14/02	0.18		09/26/02	0.14	
03/16/02	0.09		09/27/02	0.03	1.09
03/17/02	0.02		10/01/02	0.6	
03/19/02	0.12		10/02/02	0.04	
03/25/02	0.19	0.64	10/03/02	0.03	
05/11/02	0.03		10/23/02	0.02	
05/12/02	0.2		10/24/02	0.09	
05/14/02	0.03		10/26/02	0.52	
05/16/02	0.26		10/28/02	0.01	
05/18/02	0.01		10/29/02	0.07	
05/20/02	0.04		10/30/02	0.1	
05/23/02	0.21		10/31/02	0.08	1.56
05/24/02	0.42	1.2	11/01/02	0.02	
06/03/02	0.01		11/03/02	0.06	
06/07/02	0.09		11/09/02	0.01	
06/19/02	0.07		11/15/02	0.01	
06/20/02	0.28		11/25/02	0.03	0.13
06/21/02	0.2		12/27/02	0.16	0.16
06/23/02	0.02	0.67			
07/05/02	0.07				
07/06/02	0.55				
07/21/02	0.39				
07/22/02	0.05				
07/23/02	0.02	1.08			

Appendix 2g. Daily rainfall for (a) Trumbull, (b) upper Saloon Gulch, and (c) Spring Creek from 8 August – 31 October 2001.

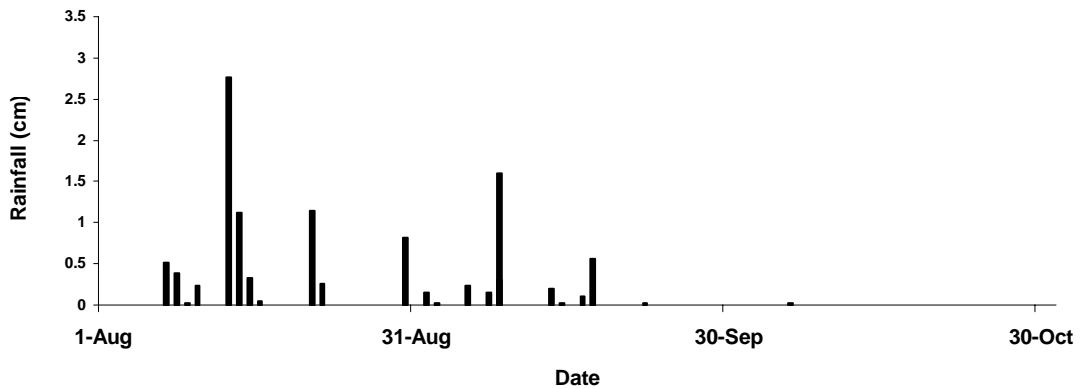
(a) Trumbull



(b) Upper Saloon Gulch

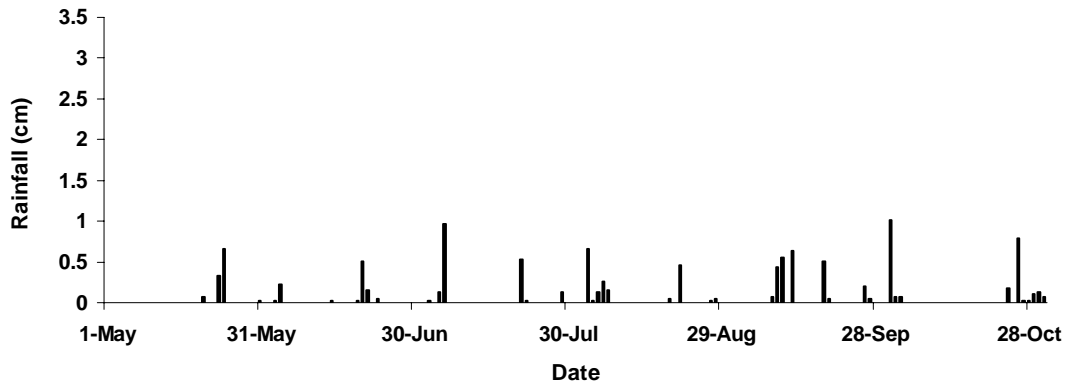


(c) Spring Creek

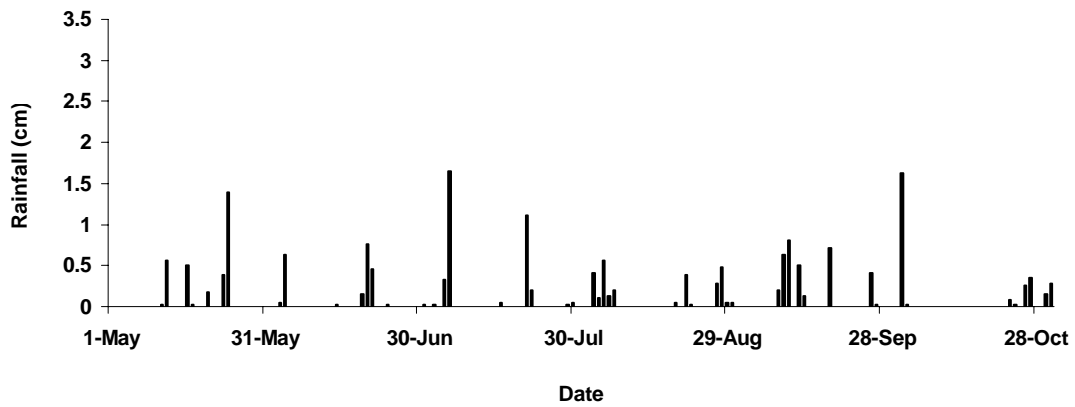


Appendix 2h. Daily rainfall for (a) Trumbull, (b) upper Saloon Gulch, and (c) Spring Creek from 1 May – 31 October 2002.

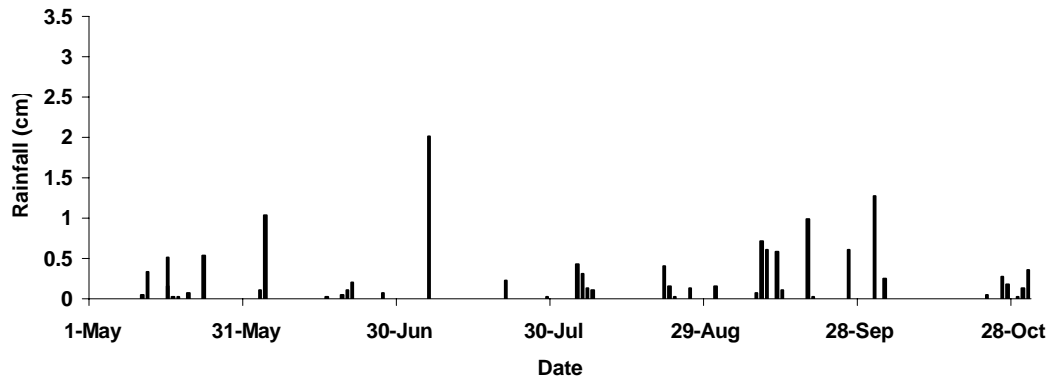
(a) Trumbull



(b) Upper Saloon Gulch



(c) Spring Creek



Appendix 2i. Storm depth, storm duration, maximum 30-minute rainfall intensity, and storm erosivity for storms larger than 5 mm.

Site	Year	Date	Storm depth (mm)	Storm duration (hr:min:sec)	I 30 (mm/hr)	Erosivity (MJ mm ha-1 hr-1)
USG	2001	8/8/2001	5.59	1:36:49	10.0	6.4
		8/14/2001	6.10	1:31:35	12.7	9.2
		8/21/2001	8.13	1:26:30	10.2	10.9
		8/30/2001	6.10	1:05:04	12.1	12.2
		9/8/2001	6.35	0:50:09	9.7	9.0
	2002	5/12/2002	5.08	0:45:27	8.3	5.9
		5/24/2002	9.91	1:25:21	7.6	10.7
		7/6/2002	16.51	1:56:55	17.3	32.9
		7/21/2002	11.18	0:41:55	61.9	135.7
		8/28/2002	4.83	1:31:24	10.0	5.4
		9/12/2002	5.08	0:18:47	16.4	16.4
		9/18/2002	5.08	2:28:05	3.0	1.6
		10/1/2002	8.64	2:10:06	4.6	2.6
LSG	2001	8/21/2001	5.59	0:47:19	8.1	6.5
		9/7/2001	5.84	0:27:24	11.7	12.3
		9/8/2001	8.64	0:42:28	13.7	20.9
	2002	6/19/2002	5.84	0:10:57	8.1	12.1
		6/20/2002	8.13	1:04:09	7.1	8.6
		7/6/2002	14.99	0:58:49	22.9	60.4
		7/21/2002	30.73	0:41:59	69.4	538.1
		7/23/2002	13.21	0:16:07	27.4	75.6
TRM	2001	8/8/2001	5.08	0.07	7.1	4.0
		8/21/2001	7.37	0.05	10.2	10.1
		9/7/2001	5.33	0.04	9.1	6.2
		9/8/2001	9.14	0.04	12.2	17.3
	2002	5/24/2002	4.83	0.07	5.1	2.7
		7/6/2002	9.14	0.09	11.7	12.8
		7/21/2002	5.08	0.03	21.2	16.2
		9/12/2002	5.33	0.02	13.3	12.9
		9/18/2002	4.83	0.13	3.0	1.5
		10/1/2002	7.62	0.11	2.9	3.1
		10/26/2002	7.87	0.12	6.6	8.2

USG - Upper Saloon Gulch

LSG - Lower Saloon Gulch

TRM - Trumbull

Appendix 2i. (continued).

Site	Year	Date	Storm depth (mm)	Storm duration (hr:min:sec)	I 30 (mm/hr)	Erosivity (MJ mm ha-1 hr-1)
SC	2001	8/7/2001	5.08	0:18:25	7.6	42.2
		8/13/2001	27.43	0:32:56	46.7	350.6
		8/14/2001	11.18	0:57:52	15.2	32.4
		8/21/2001	11.18	0:47:04	28.3	75.8
		8/30/2001	8.13	0:34:07	11.0	20.1
		9/8/2001	11.43	0:45:34	14.2	31.3

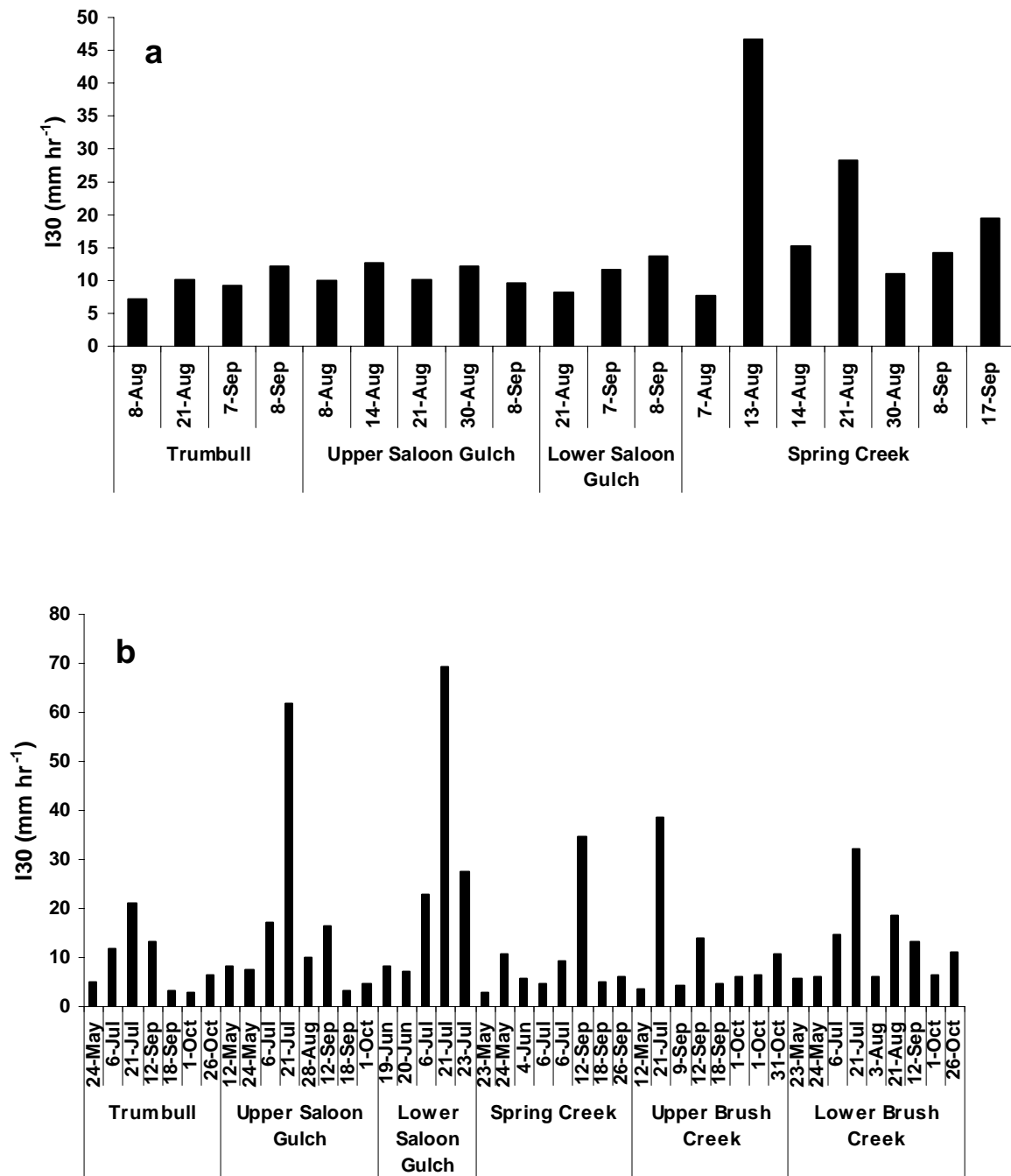
		9/17/2001	4.83	0:14:14	19.5	20.1
	2002	5/23/2002	5.08	1:37:15	3.0	1.6
		5/24/2002	11.18	0:49:46	10.7	18.6
		6/4/2002	11.18	3:13:23	5.6	4.9
		7/6/2002	7.87	1:49:48	4.6	4.4
		7/6/2002	8.64	1:39:16	9.1	12.0
		9/12/2002	5.84	0:17:20	34.5	43.1
		9/18/2002	8.89	3:33:47	5.1	4.8
		9/26/2002	5.84	1:23:04	6.1	3.9
		5/12/2002	6.10	0:47:37	3.6	3.0
UBC	2002	7/21/2002	14.48	0:57:13	38.5	107.1
		9/9/2002	7.11	2:27:41	4.4	3.7
		9/12/2002	6.86	0:29:24	14.0	17.9
		9/18/2002	5.33	1:59:24	4.6	2.6
		10/1/2002	6.35	1:34:54	6.1	4.6
		10/1/2002	6.60	1:14:54	6.6	5.7
		10/31/2002	8.38	0:53:10	10.7	12.6
		5/23/2002	5.33	1:48:07	5.9	3.4
LBC	2002	5/24/2002	5.33	1:37:34	6.2	3.7
		7/6/2002	12.45	1:50:22	14.7	27.7
		7/21/2002	9.65	0:47:20	32.0	71.4
		8/3/2002	7.87	4:01:37	6.1	11.5
		8/21/2002	8.13	0:26:18	18.5	31.1
		9/12/2002	6.35	0:32:19	13.3	14.9
		10/1/2002	8.64	1:55:51	6.6	7.0
		10/26/2002	12.70	2:39:48	11.2	19.8

SC - Spring Creek

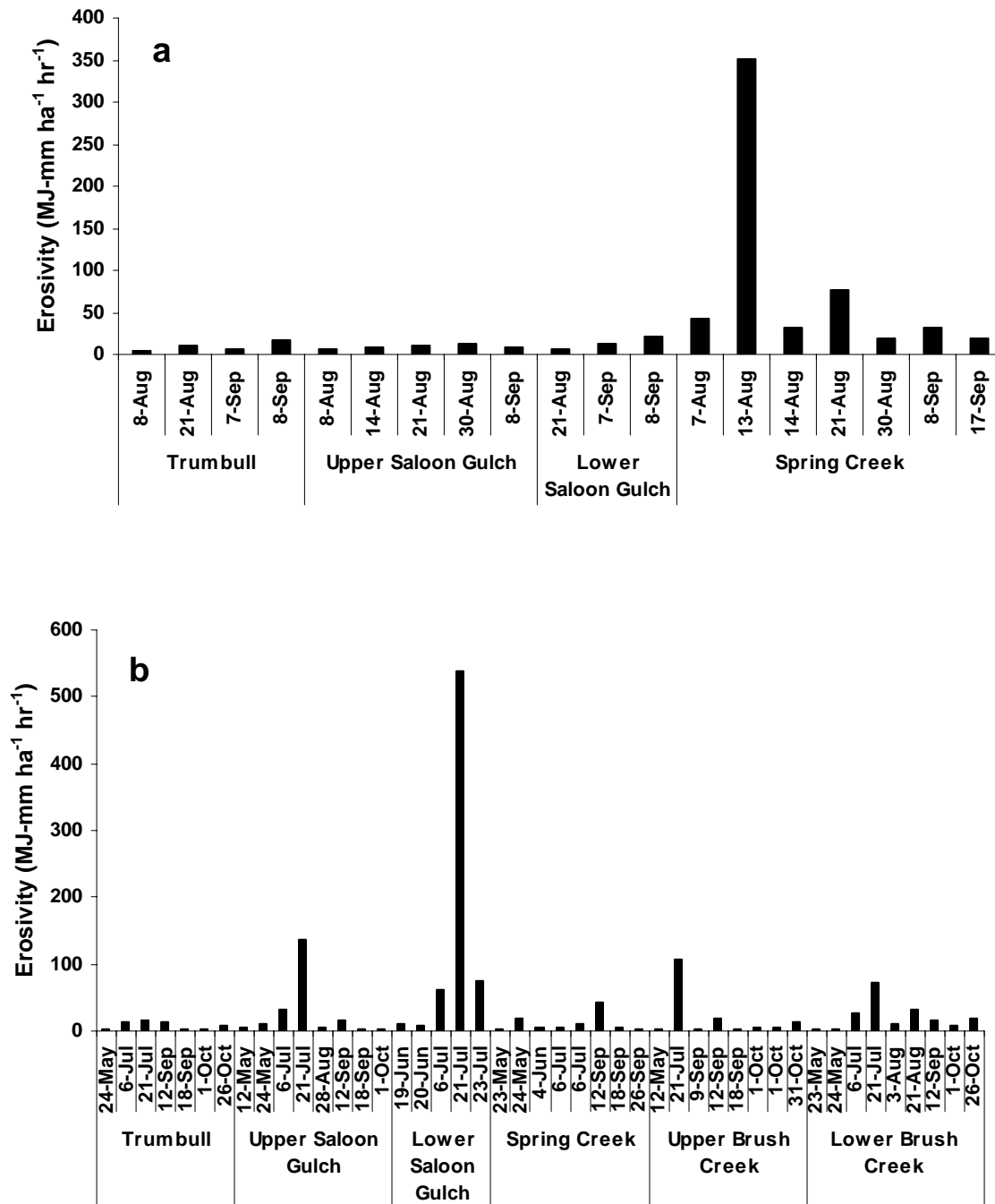
UBC - Upper Brush Creek

LBC - Lower Brush Creek

Appendix 2j. Maximum 30-minute rainfall intensity for all storms larger than 5 mm for: (a) 8 August-31 October 2001, and (b) 1 May-31 October 2002.



Appendix 2k. Rainfall erosivity for storms larger than 5 mm for: (a) 8 August-31 October 2001, and (b) 1 May-31 October 2002.



APPENDIX 3.

Tip-by-tip precipitation data from the six rain gauges in the study area

Appendix 3a. Precipitation data for the upper Saloon Gulch rain gauge.

Date	Time	Tip No. (0.01 in)	Date	Time	Tip No. (0.01 in)	Date	Time	Tip No. (0.01 in)
08/06/01	17:28:39	0	08/10/01	20:22:09	45	08/21/01	17:20:09	90
08/06/01	18:00:57	1	08/10/01	20:28:22	46	08/21/01	17:21:34	91
08/07/01	14:00:52	2	08/10/01	20:34:45	47	08/21/01	17:22:24	92
08/07/01	14:11:14	3	08/10/01	21:08:47	48	08/21/01	17:23:22	93
08/07/01	14:51:42	4	08/10/01	22:11:36	49	08/21/01	17:24:02	94
08/07/01	14:53:08	5	08/12/01	14:24:49	50	08/21/01	17:24:44	95
08/08/01	17:39:09	6	08/14/01	13:01:19	51	08/21/01	17:25:12	96
08/08/01	17:40:50	7	08/14/01	13:35:03	52	08/21/01	17:26:00	97
08/08/01	17:44:29	8	08/14/01	14:34:09	53	08/21/01	17:26:30	98
08/08/01	17:47:49	9	08/14/01	14:40:34	54	08/21/01	17:27:19	99
08/08/01	17:53:40	10	08/14/01	15:10:59	55	08/21/01	17:27:59	100
08/08/01	17:54:38	11	08/14/01	15:12:49	56	08/21/01	17:28:52	101
08/08/01	17:55:46	12	08/14/01	15:13:38	57	08/21/01	17:29:24	102
08/08/01	17:56:11	13	08/14/01	15:14:43	58	08/21/01	17:30:09	103
08/08/01	17:56:38	14	08/14/01	15:15:22	59	08/21/01	17:30:46	104
08/08/01	17:56:55	15	08/14/01	15:16:15	60	08/21/01	17:31:16	105
08/08/01	17:57:15	16	08/14/01	15:16:55	61	08/21/01	17:31:47	106
08/08/01	17:57:41	17	08/14/01	15:17:58	62	08/21/01	17:32:32	107
08/08/01	17:58:29	18	08/14/01	15:18:55	63	08/21/01	17:33:13	108
08/08/01	17:59:56	19	08/14/01	15:19:52	64	08/21/01	17:34:25	109
08/08/01	18:37:40	20	08/14/01	15:20:23	65	08/21/01	17:35:22	110
08/08/01	18:52:03	21	08/14/01	15:21:01	66	08/21/01	17:42:10	111
08/08/01	18:57:18	22	08/14/01	15:21:30	67	08/21/01	17:47:29	112
08/08/01	19:01:10	23	08/14/01	15:22:31	68	08/21/01	17:53:05	113
08/08/01	19:02:10	24	08/14/01	15:23:19	69	08/21/01	17:58:03	114
08/08/01	19:02:36	25	08/14/01	15:25:28	70	08/21/01	18:04:39	115
08/08/01	19:04:00	26	08/14/01	15:27:35	71	08/21/01	18:06:24	116
08/08/01	19:15:58	27	08/14/01	15:31:12	72	08/21/01	18:09:02	117
08/09/01	11:15:18	28	08/14/01	15:42:13	73	08/21/01	18:20:35	118
08/09/01	11:23:16	29	08/14/01	15:48:02	74	08/21/01	18:28:04	119
08/09/01	11:30:25	30	08/14/01	15:51:50	75	08/21/01	18:45:34	120
08/09/01	11:36:30	31	08/14/01	16:00:45	76	08/22/01	16:01:16	121
08/09/01	11:47:06	32	08/14/01	16:05:44	77	08/22/01	16:03:26	122
08/09/01	11:52:39	33	08/14/01	18:37:59	78	08/22/01	16:05:52	123
08/09/01	11:58:00	34	08/15/01	2:17:47	79	08/22/01	16:07:48	124
08/09/01	12:00:47	35	08/15/01	2:29:37	80	08/22/01	16:11:23	125
08/09/01	12:29:06	36	08/15/01	2:40:02	81	08/22/01	16:14:21	126
08/10/01	17:51:35	37	08/15/01	2:50:14	82	08/22/01	16:19:57	127
08/10/01	18:03:42	38	08/15/01	3:04:16	83	08/22/01	17:48:30	128
08/10/01	18:06:38	39	08/15/01	12:24:12	84	08/30/01	13:35:04	129
08/10/01	18:12:22	40	08/15/01	12:36:03	85	08/30/01	13:35:53	130
08/10/01	18:16:14	41	08/15/01	12:59:44	86	08/30/01	13:37:58	131
08/10/01	18:19:25	42	08/15/01	16:57:02	87	08/30/01	13:38:49	132
08/10/01	18:22:24	43	08/15/01	17:14:35	88	08/30/01	13:40:18	133
08/10/01	18:30:51	44	08/21/01	17:19:04	89	08/30/01	13:41:02	134

Appendix 3a. (continued).

Date	Time	Tip No. (0.01 in)	Date	Time	Tip No. (0.01 in)	Date	Time	Tip No. (0.01 in)
08/30/01	13:42:06	135	09/08/01	0:39:18	180	10/18/01	11:34:26	225
08/30/01	13:42:55	136	09/08/01	1:38:15	181	10/18/01	11:34:41	225
08/30/01	13:44:08	137	09/08/01	7:28:59	182	10/18/01	11:36:47	0
08/30/01	13:44:49	138	09/08/01	11:44:57	183	11/07/01	17:22:57	1
08/30/01	13:45:56	139	09/08/01	11:45:37	184	11/07/01	17:25:19	2
08/30/01	13:46:41	140	09/08/01	11:46:37	185	11/07/01	17:29:11	3
08/30/01	13:48:05	141	09/08/01	11:47:24	186	11/07/01	17:31:25	4
08/30/01	13:49:52	142	09/08/01	11:48:38	187	11/07/01	17:34:37	5
08/30/01	13:52:31	143	09/08/01	11:49:29	188	11/07/01	17:36:55	6
08/30/01	13:53:38	144	09/08/01	11:50:34	189	11/07/01	17:40:06	7
08/30/01	13:55:35	145	09/08/01	11:51:25	190	11/07/01	17:43:30	8
08/30/01	13:57:07	146	09/08/01	11:52:56	191	11/07/01	17:49:20	9
08/30/01	14:03:30	147	09/08/01	11:54:11	192	11/07/01	17:56:59	10
08/30/01	14:08:35	148	09/08/01	12:00:42	193	11/07/01	18:11:54	11
08/30/01	15:30:56	149	09/08/01	12:02:10	194	11/07/01	18:38:05	12
08/30/01	15:41:04	150	09/08/01	12:04:07	195	11/08/01	10:55:41	13
08/30/01	15:50:13	151	09/08/01	12:05:34	196	11/08/01	10:56:38	14
08/30/01	16:10:16	152	09/08/01	12:07:27	197	11/08/01	10:57:49	15
09/01/01	17:03:42	153	09/08/01	12:08:43	198	11/08/01	10:58:41	16
09/01/01	17:05:46	154	09/08/01	12:10:40	199	11/08/01	11:00:01	17
09/01/01	17:07:09	155	09/08/01	12:11:54	200	11/08/01	11:00:53	18
09/01/01	17:09:15	156	09/08/01	12:13:57	201	11/08/01	11:02:21	19
09/01/01	17:09:52	157	09/08/01	12:15:31	202	11/08/01	11:03:22	20
09/01/01	17:10:53	158	09/08/01	12:17:52	203	11/08/01	11:05:10	21
09/01/01	17:12:01	159	09/08/01	12:19:44	204	11/08/01	11:06:43	22
09/01/01	17:12:46	160	09/08/01	12:23:58	205	11/08/01	11:09:24	23
09/01/01	17:14:02	161	09/08/01	12:26:47	206	11/08/01	11:11:14	24
09/01/01	17:15:06	162	09/08/01	12:32:06	207	11/08/01	11:13:15	25
09/01/01	17:16:58	163	09/08/01	12:35:06	208	11/08/01	11:14:41	26
09/01/01	17:18:51	164	09/08/01	19:09:24	209	11/08/01	11:16:36	27
09/01/01	17:30:19	165	09/09/01	7:57:53	210	11/08/01	11:18:01	28
09/07/01	6:18:22	166	09/13/01	20:14:54	211	11/08/01	11:20:04	29
09/07/01	6:21:29	167	09/13/01	20:20:25	212	11/08/01	11:21:43	30
09/07/01	7:05:45	168	09/13/01	20:32:33	213	11/08/01	11:23:52	31
09/07/01	7:39:50	169	09/13/01	20:41:31	214	11/08/01	11:25:35	32
09/07/01	7:47:00	170	09/13/01	21:02:12	215	11/08/01	11:27:49	33
09/07/01	7:57:41	171	09/13/01	21:10:32	216	11/08/01	11:29:41	34
09/07/01	8:05:17	172	09/13/01	21:35:36	217	11/08/01	11:32:18	35
09/07/01	8:15:43	173	09/13/01	21:58:58	218	11/08/01	11:34:24	36
09/07/01	8:24:20	174	09/17/01	4:28:48	219	11/08/01	11:36:43	37
09/07/01	8:31:51	175	09/17/01	4:32:26	220	11/08/01	11:40:04	38
09/07/01	8:37:21	176	09/17/01	7:25:19	221	11/19/01	10:24:35	39
09/07/01	8:45:28	177	09/17/01	11:51:12	222	11/19/01	10:26:05	40
09/07/01	8:48:47	178	09/17/01	11:54:05	223	11/19/01	10:30:58	41
09/08/01	0:20:55	179	10/05/01	10:23:39	224	11/19/01	10:33:12	42

Appendix 3a. (continued).

Tip No.			Tip No.			Tip No.		
Date	Time	(0.01 in)	Date	Time	(0.01 in)	Date	Time	(0.01 in)
11/19/01	10:37:35	43	12/16/01	13:03:01	88	01/10/02	12:20:17	133
11/19/01	10:44:32	44	12/16/01	13:09:31	89	01/10/02	12:39:56	134
11/19/01	10:51:51	45	12/16/01	13:14:45	90	01/10/02	12:44:15	135
11/19/01	10:54:29	46	12/16/01	13:19:39	91	01/10/02	12:51:12	136
11/19/01	11:03:38	47	12/16/01	13:22:51	92	01/24/02	13:18:00	137
11/22/01	20:53:08	48	12/16/01	13:28:00	93	01/24/02	13:25:56	138
11/23/01	12:30:11	49	12/16/01	13:31:15	94	01/24/02	13:28:02	139
11/26/01	11:38:58	50	12/16/01	13:36:30	95	01/24/02	13:31:28	140
11/26/01	11:42:03	51	12/16/01	13:40:26	96	01/24/02	13:34:13	141
11/26/01	11:43:03	52	12/16/01	13:45:48	97	01/24/02	13:37:48	142
11/28/01	10:45:48	53	12/16/01	13:49:52	98	01/24/02	13:40:24	143
11/29/01	12:32:24	54	12/16/01	13:56:36	99	01/24/02	13:45:10	144
11/29/01	12:48:44	55	12/16/01	14:01:07	100	01/24/02	13:48:37	145
11/29/01	12:56:31	56	12/16/01	14:08:04	101	01/24/02	13:53:53	146
11/29/01	13:05:18	57	12/16/01	14:12:47	102	01/24/02	13:57:10	147
11/29/01	13:14:28	58	12/16/01	14:17:07	103	01/24/02	14:02:06	148
11/29/01	13:27:04	59	12/16/01	14:35:23	104	01/24/02	14:05:10	149
11/29/01	13:35:59	60	12/22/01	12:36:53	105	01/24/02	14:09:53	150
11/29/01	13:47:18	61	12/22/01	13:39:25	106	01/24/02	14:13:14	151
11/29/01	13:56:24	62	12/23/01	11:55:41	107	01/24/02	14:19:56	152
11/29/01	14:01:58	63	12/23/01	12:01:31	108	01/24/02	14:25:20	153
11/29/01	14:07:42	64	12/23/01	12:12:18	109	01/24/02	14:30:12	154
11/29/01	14:17:56	65	01/01/02	11:37:51	110	01/24/02	14:31:40	155
11/29/01	14:26:21	66	01/01/02	12:13:03	111	01/24/02	14:51:29	156
11/29/01	14:38:31	67	01/02/02	12:34:54	112	01/24/02	15:23:24	157
11/29/01	15:26:48	68	01/02/02	12:47:19	113	01/25/02	14:37:08	158
11/30/01	10:53:45	69	01/02/02	16:17:21	114	01/25/02	14:37:20	158
11/30/01	11:10:16	70	01/05/02	11:49:01	115	01/25/02	14:38:41	0
11/30/01	11:31:14	71	01/05/02	11:55:01	116	01/30/02	12:11:40	1
11/30/01	11:41:59	72	01/05/02	12:00:23	117	01/30/02	13:05:38	2
11/30/01	12:44:23	73	01/05/02	12:14:56	118	01/31/02	12:34:29	3
11/30/01	13:03:19	74	01/05/02	12:36:55	119	01/31/02	12:53:05	4
11/30/01	13:24:10	75	01/05/02	13:02:07	120	01/31/02	13:06:52	5
11/30/01	13:55:03	76	01/05/02	13:28:13	121	01/31/02	13:41:43	6
12/01/01	11:29:57	77	01/05/02	13:38:51	122	02/01/02	11:22:12	7
12/01/01	11:52:18	78	01/10/02	10:34:20	123	02/09/02	14:52:30	8
12/01/01	12:20:50	79	01/10/02	10:39:01	124	02/10/02	10:28:10	9
12/08/01	12:52:58	80	01/10/02	10:40:30	125	02/10/02	11:11:33	10
12/12/01	13:45:58	81	01/10/02	11:49:15	126	02/10/02	11:15:07	11
12/12/01	13:51:34	82	01/10/02	11:51:27	127	02/12/02	8:11:42	12
12/12/01	14:28:56	83	01/10/02	11:54:44	128	02/15/02	11:28:07	13
12/13/01	11:34:23	84	01/10/02	11:57:23	129	02/15/02	11:30:57	14
12/16/01	12:53:13	85	01/10/02	12:01:21	130	02/15/02	11:34:15	15
12/16/01	12:56:03	86	01/10/02	12:04:24	131	02/15/02	11:36:47	16
12/16/01	12:59:45	87	01/10/02	12:13:29	132	02/15/02	11:40:36	17

Appendix 3a. (continued).

Tip No.			Tip No.			Tip No.		
Date	Time	(0.01 in)	Date	Time	(0.01 in)	Date	Time	(0.01 in)
02/15/02	11:43:18	18	03/15/02	16:06:33	63	05/12/02	11:22:54	108
02/15/02	11:47:27	19	03/16/02	12:43:26	64	05/12/02	11:24:06	109
02/15/02	11:51:06	20	03/16/02	12:52:32	65	05/12/02	11:25:05	110
02/15/02	11:55:07	21	03/16/02	13:09:23	66	05/12/02	11:26:40	111
02/15/02	12:01:29	22	03/16/02	13:19:22	67	05/12/02	11:27:51	112
02/15/02	12:12:43	23	03/16/02	13:28:03	68	05/12/02	11:29:41	113
02/15/02	12:18:11	24	03/17/02	11:30:16	69	05/12/02	11:31:13	114
02/19/02	10:15:17	25	03/17/02	11:34:29	70	05/12/02	11:33:32	115
02/19/02	10:21:58	26	03/17/02	11:39:25	71	05/12/02	11:35:08	116
02/25/02	11:56:35	27	03/17/02	11:42:38	72	05/12/02	11:37:31	117
02/26/02	12:19:47	28	03/19/02	9:08:25	73	05/12/02	11:39:25	118
02/26/02	12:43:38	29	03/19/02	9:53:55	74	05/12/02	11:42:16	119
03/03/02	12:38:05	30	03/19/02	9:55:54	75	05/12/02	11:44:05	120
03/03/02	12:58:49	31	03/19/02	9:57:24	76	05/12/02	11:47:12	121
03/03/02	13:35:21	32	03/19/02	9:59:32	77	05/12/02	11:49:18	122
03/03/02	14:53:48	33	03/19/02	10:01:09	78	05/12/02	11:53:39	123
03/03/02	15:00:18	34	03/19/02	10:03:42	79	05/12/02	11:58:18	124
03/04/02	10:15:45	35	03/19/02	10:05:42	80	05/12/02	12:03:21	125
03/04/02	10:25:16	36	03/19/02	10:13:33	81	05/12/02	12:07:35	126
03/04/02	10:37:46	37	03/19/02	10:16:21	82	05/16/02	11:39:08	127
03/04/02	10:47:04	38	03/19/02	10:20:36	83	05/16/02	11:39:31	127
03/04/02	10:55:21	39	03/19/02	10:25:12	84	05/16/02	10:37:02	0
03/04/02	11:02:51	40	03/25/02	10:50:04	85	05/16/02	13:41:00	1
03/04/02	11:11:36	41	03/25/02	10:50:48	86	05/16/02	13:47:20	2
03/04/02	11:18:23	42	03/25/02	10:52:02	87	05/16/02	13:55:26	3
03/09/02	9:18:29	43	03/25/02	10:53:03	88	05/16/02	13:59:01	4
03/09/02	9:29:21	44	03/25/02	10:54:42	89	05/16/02	14:06:04	5
03/14/02	8:59:04	45	03/25/02	10:55:51	90	05/16/02	14:20:46	6
03/14/02	10:05:42	46	03/25/02	10:57:25	91	05/16/02	16:27:34	7
03/14/02	10:07:31	47	03/25/02	10:58:40	92	05/16/02	16:38:47	8
03/14/02	10:08:38	48	03/25/02	11:00:31	93	05/16/02	16:47:13	9
03/14/02	10:10:11	49	03/25/02	11:02:14	94	05/16/02	16:50:18	10
03/14/02	10:11:39	50	03/25/02	11:04:51	95	05/16/02	16:57:47	11
03/14/02	10:14:15	51	03/25/02	11:07:40	96	05/16/02	17:00:05	12
03/14/02	10:16:12	52	03/25/02	11:10:50	97	05/16/02	17:03:06	13
03/14/02	10:18:07	53	03/25/02	11:12:25	98	05/16/02	17:07:44	14
03/14/02	10:19:22	54	03/26/02	7:27:31	99	05/16/02	18:13:10	15
03/14/02	10:21:09	55	03/26/02	10:42:02	100	05/16/02	18:41:05	16
03/14/02	10:22:33	56	04/19/02	9:36:11	101	05/16/02	20:16:10	17
03/14/02	10:24:52	57	04/19/02	9:36:13	102	05/17/02	0:47:45	18
03/14/02	10:27:05	58	04/26/02	11:19:55	103	05/20/02	12:48:57	19
03/14/02	10:30:15	59	05/11/02	20:18:02	104	05/20/02	12:50:16	20
03/14/02	10:32:19	60	05/12/02	0:36:46	105	05/20/02	12:54:12	21
03/15/02	9:09:48	61	05/12/02	9:17:30	106	05/20/02	12:55:54	22
03/15/02	14:54:10	62	05/12/02	11:22:08	107	05/20/02	15:44:16	23

Appendix 3a. (continued).

Date	Time	Tip No. (0.01 in)	Date	Time	Tip No. (0.01 in)	Date	Time	Tip No. (0.01 in)
05/20/02	16:24:07	24	05/24/02	12:08:43	69	06/04/02	8:49:20	114
05/20/02	17:00:21	25	05/24/02	12:10:26	70	06/04/02	9:01:37	115
05/23/02	19:19:37	26	05/24/02	12:12:50	71	06/04/02	9:10:20	116
05/23/02	19:30:37	27	05/24/02	12:14:08	72	06/04/02	10:16:18	117
05/23/02	19:34:30	28	05/24/02	12:15:52	73	06/04/02	10:35:57	118
05/23/02	19:40:14	29	05/24/02	12:16:52	74	06/04/02	13:28:56	119
05/23/02	19:45:21	30	05/24/02	12:18:33	75	06/04/02	13:38:18	120
05/23/02	20:01:48	31	05/24/02	12:19:39	76	06/04/02	13:49:20	121
05/23/02	20:16:15	32	05/24/02	12:21:04	77	06/04/02	14:39:52	122
05/23/02	20:27:46	33	05/24/02	12:22:13	78	06/14/02	14:57:13	123
05/23/02	21:10:48	34	05/24/02	12:24:33	79	06/19/02	22:34:15	124
05/23/02	21:37:18	35	05/24/02	12:26:08	80	06/19/02	22:45:35	125
05/23/02	21:47:09	36	05/24/02	12:29:01	81	06/19/02	22:48:47	126
05/23/02	22:13:46	37	05/24/02	12:31:31	82	06/19/02	22:58:17	127
05/23/02	22:29:41	38	05/24/02	12:34:48	83	06/19/02	23:04:58	128
05/23/02	22:53:07	39	05/24/02	12:37:10	84	06/19/02	23:07:45	129
05/23/02	23:11:00	40	05/24/02	12:40:41	85	06/20/02	15:25:44	130
05/24/02	0:14:02	41	05/24/02	12:43:44	86	06/20/02	15:27:36	131
05/24/02	6:35:40	42	05/24/02	12:48:12	87	06/20/02	15:30:29	132
05/24/02	8:40:57	43	05/24/02	12:50:20	88	06/20/02	16:15:10	133
05/24/02	8:44:53	44	05/24/02	12:52:59	89	06/20/02	16:17:18	134
05/24/02	8:52:14	45	05/24/02	12:55:12	90	06/20/02	16:30:54	135
05/24/02	8:57:59	46	05/24/02	12:58:02	91	06/20/02	16:36:05	136
05/24/02	9:06:06	47	05/24/02	13:00:14	92	06/20/02	16:41:11	137
05/24/02	9:11:18	48	05/24/02	13:04:23	93	06/20/02	16:44:54	138
05/24/02	9:19:35	49	05/24/02	13:06:30	94	06/20/02	16:45:38	139
05/24/02	9:26:18	50	05/24/02	13:12:48	95	06/20/02	16:46:05	140
05/24/02	9:33:52	51	06/03/02	23:19:09	96	06/20/02	16:47:06	141
05/24/02	9:39:21	52	06/03/02	23:35:34	97	06/20/02	16:47:21	142
05/24/02	9:45:15	53	06/04/02	0:03:30	98	06/20/02	16:47:46	143
05/24/02	9:49:11	54	06/04/02	0:19:50	99	06/20/02	16:48:04	144
05/24/02	9:56:16	55	06/04/02	0:24:05	100	06/20/02	16:48:32	145
05/24/02	10:03:09	56	06/04/02	0:29:43	101	06/20/02	16:49:14	146
05/24/02	11:47:27	57	06/04/02	0:34:23	102	06/20/02	19:55:34	147
05/24/02	11:48:28	58	06/04/02	0:40:51	103	06/20/02	19:58:54	148
05/24/02	11:49:58	59	06/04/02	0:48:58	104	06/20/02	20:05:17	149
05/24/02	11:50:53	60	06/04/02	1:45:07	105	06/20/02	20:06:54	150
05/24/02	11:52:14	61	06/04/02	2:01:45	106	06/20/02	20:08:05	151
05/24/02	11:53:14	62	06/04/02	2:34:58	107	06/20/02	20:09:23	152
05/24/02	11:54:49	63	06/04/02	6:48:38	108	06/20/02	20:11:15	153
05/24/02	11:56:03	64	06/04/02	8:11:47	109	06/20/02	20:12:30	154
05/24/02	11:57:39	65	06/04/02	8:17:20	110	06/20/02	20:21:21	155
05/24/02	11:58:48	66	06/04/02	8:18:59	111	06/20/02	20:36:08	156
05/24/02	12:00:28	67	06/04/02	8:20:47	112	06/20/02	20:56:24	157
05/24/02	12:06:12	68	06/04/02	8:27:21	113	06/20/02	21:00:50	158

Appendix 3a. (continued).

Date	Time	Tip No. (0.01 in)	Date	Time	Tip No. (0.01 in)	Date	Time	Tip No. (0.01 in)
06/20/02	21:09:31	159	07/06/02	4:16:09	204	07/06/02	6:05:08	249
06/21/02	17:20:52	160	07/06/02	4:21:54	205	07/06/02	6:05:53	250
06/21/02	17:23:35	161	07/06/02	4:24:25	206	07/06/02	6:07:40	251
06/21/02	17:26:53	162	07/06/02	4:36:38	207	07/06/02	6:11:46	252
06/21/02	17:29:57	163	07/06/02	5:06:25	208	07/06/02	6:19:10	253
06/21/02	17:32:58	164	07/06/02	5:09:21	209	07/06/02	6:25:47	254
06/21/02	17:35:20	165	07/06/02	5:10:35	210	07/06/02	6:32:57	255
06/21/02	17:45:38	166	07/06/02	5:12:49	211	07/06/02	6:38:26	256
06/21/02	17:47:34	167	07/06/02	5:14:11	212	07/06/02	6:49:00	257
06/21/02	17:48:53	168	07/06/02	5:15:52	213	07/06/02	7:03:20	258
06/21/02	17:52:27	169	07/06/02	5:20:07	214	07/16/02	13:45:28	259
06/21/02	17:54:19	170	07/06/02	5:27:38	215	07/16/02	13:45:35	260
06/21/02	20:39:40	171	07/06/02	5:32:28	216	07/16/02	13:45:39	260
06/21/02	20:47:21	172	07/06/02	5:37:40	217	07/16/02	2:28:55	0
06/21/02	20:53:05	173	07/06/02	5:41:07	218	07/21/02	8:13:06	1
06/21/02	21:03:09	174	07/06/02	5:42:27	219	07/21/02	8:16:59	2
06/21/02	21:09:26	175	07/06/02	5:43:06	220	07/21/02	8:19:03	3
06/21/02	21:12:05	176	07/06/02	5:43:59	221	07/21/02	8:19:42	4
06/21/02	21:16:07	177	07/06/02	5:44:55	222	07/21/02	8:19:58	5
06/24/02	15:18:50	178	07/06/02	5:46:03	223	07/21/02	8:20:14	6
07/01/02	15:50:47	179	07/06/02	5:46:48	224	07/21/02	8:20:30	7
07/03/02	12:00:32	180	07/06/02	5:48:07	225	07/21/02	8:20:39	8
07/05/02	20:27:01	181	07/06/02	5:48:59	226	07/21/02	8:20:55	9
07/05/02	20:46:26	182	07/06/02	5:50:55	227	07/21/02	8:21:05	10
07/05/02	21:17:15	183	07/06/02	5:52:37	228	07/21/02	8:21:20	11
07/05/02	21:27:40	184	07/06/02	5:54:19	229	07/21/02	8:21:33	12
07/05/02	21:49:49	185	07/06/02	5:54:51	230	07/21/02	8:21:58	13
07/05/02	22:02:12	186	07/06/02	5:55:28	231	07/21/02	8:22:19	14
07/05/02	22:39:44	187	07/06/02	5:56:02	232	07/21/02	8:22:45	15
07/05/02	22:41:06	188	07/06/02	5:56:41	233	07/21/02	8:23:01	16
07/05/02	22:41:48	189	07/06/02	5:57:01	234	07/21/02	8:23:23	17
07/05/02	22:42:17	190	07/06/02	5:57:45	235	07/21/02	8:23:33	18
07/05/02	22:43:03	191	07/06/02	5:58:15	236	07/21/02	8:23:52	19
07/05/02	22:43:36	192	07/06/02	5:58:54	237	07/21/02	8:24:08	20
07/05/02	22:46:31	193	07/06/02	5:59:23	238	07/21/02	8:24:24	21
07/06/02	2:26:39	194	07/06/02	6:00:00	239	07/21/02	8:24:34	22
07/06/02	2:59:01	195	07/06/02	6:00:23	240	07/21/02	8:24:48	23
07/06/02	3:13:55	196	07/06/02	6:01:17	241	07/21/02	8:24:57	24
07/06/02	3:20:20	197	07/06/02	6:01:30	242	07/21/02	8:25:09	25
07/06/02	3:22:11	198	07/06/02	6:01:46	243	07/21/02	8:25:18	26
07/06/02	3:26:25	199	07/06/02	6:01:57	244	07/21/02	8:25:28	27
07/06/02	3:31:27	200	07/06/02	6:02:14	245	07/21/02	8:25:37	28
07/06/02	3:42:21	201	07/06/02	6:02:32	246	07/21/02	8:25:48	29
07/06/02	3:49:18	202	07/06/02	6:03:14	247	07/21/02	8:25:59	30
07/06/02	3:58:29	203	07/06/02	6:03:56	248	07/21/02	8:26:18	31

Appendix 3a. (continued).

Tip No.			Tip No.			Tip No.		
Date	Time	(0.01 in)	Date	Time	(0.01 in)	Date	Time	(0.01 in)
07/21/02	8:26:38	32	08/05/02	1:57:20	77	08/21/02	4:16:05	122
07/21/02	8:26:59	33	08/05/02	1:58:10	78	08/21/02	4:18:04	123
07/21/02	8:27:18	34	08/05/02	1:59:15	79	08/21/02	4:21:49	124
07/21/02	8:27:39	35	08/05/02	1:59:49	80	08/21/02	4:27:48	125
07/21/02	8:27:52	36	08/05/02	2:00:58	81	08/21/02	4:31:51	126
07/21/02	8:28:04	37	08/05/02	2:03:08	82	08/21/02	5:18:32	127
07/21/02	8:28:13	38	08/05/02	2:12:49	83	08/22/02	3:54:39	128
07/21/02	8:28:27	39	08/05/02	2:14:04	84	08/27/02	8:14:12	129
07/21/02	8:28:38	40	08/05/02	2:15:54	85	08/27/02	8:25:53	130
07/21/02	8:29:12	41	08/05/02	2:16:21	86	08/27/02	8:29:15	131
07/21/02	8:29:51	42	08/05/02	2:16:50	87	08/27/02	8:30:29	132
07/21/02	8:32:56	43	08/05/02	2:17:26	88	08/27/02	8:31:47	133
07/21/02	8:55:01	44	08/05/02	2:18:19	89	08/27/02	8:32:53	134
07/22/02	12:03:12	45	08/05/02	2:19:31	90	08/27/02	8:33:38	135
07/22/02	12:05:19	46	08/05/02	4:35:43	91	08/27/02	8:34:10	136
07/22/02	2:42:55	47	08/05/02	4:51:19	92	08/27/02	8:36:02	137
07/22/02	2:46:45	48	08/05/02	6:12:25	93	08/27/02	8:36:56	138
07/22/02	2:50:44	49	08/05/02	7:07:43	94	08/27/02	9:01:30	139
07/22/02	2:53:42	50	08/05/02	7:10:04	95	08/28/02	2:51:46	140
07/22/02	3:06:48	51	08/05/02	7:14:12	96	08/28/02	2:55:17	141
07/22/02	3:09:13	52	08/05/02	7:30:47	97	08/28/02	2:57:21	142
07/29/02	7:05:20	53	08/06/02	4:39:13	98	08/28/02	3:59:36	143
07/30/02	3:42:41	54	08/06/02	4:48:14	99	08/28/02	4:00:42	144
07/30/02	3:43:46	55	08/06/02	4:49:34	100	08/28/02	4:01:51	145
08/03/02	7:26:41	56	08/06/02	4:53:52	101	08/28/02	4:02:36	146
08/03/02	7:36:52	57	08/06/02	5:21:28	102	08/28/02	4:04:17	147
08/03/02	7:39:32	58	08/07/02	4:49:24	103	08/28/02	4:05:15	148
08/03/02	7:44:57	59	08/07/02	4:52:55	104	08/28/02	4:07:20	149
08/03/02	7:49:25	60	08/07/02	4:55:08	105	08/28/02	4:08:46	150
08/03/02	8:35:09	61	08/07/02	4:57:35	106	08/28/02	4:09:40	151
08/03/02	8:58:35	62	08/07/02	5:00:55	107	08/28/02	4:10:09	152
08/03/02	9:51:22	63	08/07/02	7:09:04	108	08/28/02	4:12:36	153
08/03/02	9:56:46	64	08/07/02	7:14:34	109	08/28/02	4:14:35	154
08/03/02	10:00:29	65	08/07/02	7:17:57	110	08/28/02	4:15:38	155
08/03/02	10:02:16	66	08/19/02	4:07:29	111	08/28/02	4:16:26	156
08/03/02	10:07:17	67	08/19/02	4:36:43	112	08/28/02	4:18:15	157
08/03/02	10:11:51	68	08/21/02	4:05:19	113	08/28/02	4:23:10	158
08/03/02	10:19:21	69	08/21/02	4:05:49	114	08/29/02	3:05:54	159
08/03/02	10:35:27	70	08/21/02	4:06:13	115	08/29/02	3:08:11	160
08/03/02	11:16:36	71	08/21/02	4:06:34	116	08/30/02	7:31:06	160
08/04/02	12:07:31	72	08/21/02	4:07:11	117	08/30/02	7:44:43	0
08/04/02	12:13:01	73	08/21/02	4:07:48	118	09/08/02	11:34:14	1
08/04/02	12:34:03	74	08/21/02	4:08:59	119	09/08/02	11:39:11	2
08/04/02	12:40:53	75	08/21/02	4:10:58	120	09/08/02	11:45:46	3
08/05/02	1:53:24	76	08/21/02	4:14:37	121	09/08/02	11:48:45	4

Appendix 3a. (continued).

Tip No.			Tip No.			Tip No.		
Date	Time	(0.01 in)	Date	Time	(0.01 in)	Date	Time	(0.01 in)
09/08/02	11:49:55	5	09/10/02	2:47:51	50	09/18/02	13:57:13	28
09/08/02	11:50:40	6	09/10/02	3:23:32	51	09/18/02	14:02:59	29
09/08/02	11:54:26	7	09/10/02	3:41:01	52	09/18/02	14:12:51	30
09/08/02	11:58:58	8	09/10/02	3:56:41	53	09/18/02	14:18:55	31
09/09/02	1:11:05	9	09/10/02	4:11:47	54	09/18/02	18:06:58	32
09/09/02	2:50:06	10	09/10/02	4:20:48	55	09/18/02	18:12:30	33
09/09/02	8:54:03	11	09/10/02	4:29:46	56	09/18/02	18:22:25	34
09/09/02	8:36:59	12	09/10/02	5:01:41	57	09/18/02	18:28:30	35
09/09/02	8:46:30	13	09/10/02	5:34:54	58	09/18/02	18:40:04	36
09/09/02	8:52:08	14	09/10/02	6:20:51	59	09/18/02	18:45:02	37
09/09/02	8:56:17	15	09/10/02	6:30:06	60	09/18/02	18:54:17	38
09/09/02	8:59:15	16	09/10/02	6:44:29	61	09/18/02	19:00:42	39
09/09/02	9:01:35	17	09/10/02	6:58:26	62	09/18/02	19:04:38	40
09/09/02	9:03:02	18	09/10/02	7:23:03	63	09/18/02	19:08:53	41
09/09/02	9:07:35	19	09/10/02	7:39:10	64	09/18/02	19:12:53	42
09/09/02	9:11:42	20	09/10/02	8:02:37	65	09/18/02	19:16:12	43
09/09/02	9:16:46	21	09/12/02	12:39:36	65	09/18/02	19:24:32	44
09/09/02	9:19:06	22	09/12/02	12:34:01	0	09/18/02	19:31:50	45
09/09/02	9:22:21	23	09/12/02	16:27:35	1	09/18/02	19:40:54	46
09/09/02	9:25:33	24	09/12/02	16:30:51	2	09/18/02	19:46:33	47
09/09/02	9:33:41	25	09/12/02	16:33:18	3	09/18/02	19:54:59	48
09/09/02	9:56:04	26	09/12/02	16:34:50	4	09/18/02	20:01:28	49
09/09/02	10:38:44	27	09/12/02	16:35:31	5	09/18/02	20:14:28	50
09/09/02	11:19:06	28	09/12/02	16:36:07	6	09/18/02	20:35:03	51
09/09/02	11:31:29	29	09/12/02	16:36:28	7	09/18/02	21:39:35	52
09/09/02	11:37:13	30	09/12/02	16:38:31	8	09/18/02	22:04:14	53
09/09/02	11:47:23	31	09/12/02	16:39:15	9	09/21/02	14:24:03	54
09/09/02	11:51:59	32	09/12/02	16:39:54	10	09/21/02	14:24:16	54
09/09/02	11:59:26	33	09/12/02	16:40:05	11	09/21/02	14:13:10	0
09/10/02	12:03:24	34	09/12/02	16:40:36	12	09/26/02	3:58:54	1
09/10/02	12:10:13	35	09/12/02	16:41:04	13	09/26/02	4:03:41	2
09/10/02	12:13:36	36	09/12/02	16:41:45	14	09/26/02	4:11:32	3
09/10/02	12:17:41	37	09/12/02	16:41:57	15	09/26/02	4:16:11	4
09/10/02	12:19:25	38	09/12/02	16:42:15	16	09/26/02	4:21:18	5
09/10/02	12:21:22	39	09/12/02	16:42:28	17	09/26/02	4:25:53	6
09/10/02	12:22:55	40	09/12/02	16:42:55	18	09/26/02	10:30:54	7
09/10/02	12:25:56	41	09/12/02	16:43:18	19	09/26/02	10:33:03	8
09/10/02	12:28:20	42	09/12/02	16:46:22	20	09/26/02	10:36:48	9
09/10/02	12:33:10	43	09/13/02	12:07:53	21	09/26/02	10:38:36	10
09/10/02	12:38:17	44	09/13/02	12:18:44	22	09/26/02	10:41:22	11
09/10/02	12:46:16	45	09/13/02	12:20:01	23	09/26/02	10:43:13	12
09/10/02	1:01:13	46	09/13/02	12:25:30	24	09/26/02	10:48:58	13
09/10/02	1:15:23	47	09/13/02	13:07:40	25	09/26/02	10:55:01	14
09/10/02	2:04:32	48	09/18/02	13:01:32	26	09/26/02	11:04:22	15
09/10/02	2:29:09	49	09/18/02	13:09:33	27	09/26/02	11:15:43	16

Appendix 3a. (continued).

Date	Time	Tip No. (0.01 in)	Date	Time	Tip No. (0.01 in)	Date	Time	Tip No. (0.01 in)
09/27/02	15:33:01	17	10/01/02	22:01:46	62	10/27/02	10:40:24	107
10/01/02	18:47:01	18	10/01/02	22:07:06	63	10/27/02	10:45:49	108
10/01/02	19:00:23	19	10/01/02	22:12:10	64	10/27/02	10:52:07	109
10/01/02	19:07:28	20	10/01/02	22:19:33	65	10/27/02	10:58:11	110
10/01/02	19:13:23	21	10/01/02	22:26:08	66	10/30/02	9:50:10	111
10/01/02	19:17:24	22	10/01/02	22:51:34	67	10/30/02	9:53:49	112
10/01/02	19:22:50	23	10/01/02	22:56:16	68	10/30/02	9:59:01	113
10/01/02	19:25:48	24	10/01/02	23:03:14	69	10/30/02	10:05:24	114
10/01/02	19:33:59	25	10/01/02	23:07:28	70	10/30/02	12:33:30	115
10/01/02	19:37:12	26	10/01/02	23:14:29	71	10/30/02	12:49:21	116
10/01/02	19:41:44	27	10/01/02	23:17:52	72	10/31/02	8:18:50	117
10/01/02	19:44:19	28	10/01/02	23:24:44	73	10/31/02	9:33:18	118
10/01/02	19:48:17	29	10/01/02	23:32:20	74	10/31/02	10:00:22	119
10/01/02	19:52:06	30	10/01/02	23:43:39	75	10/31/02	10:50:59	120
10/01/02	19:58:13	31	10/01/02	23:58:27	76	10/31/02	10:54:34	121
10/01/02	20:02:19	32	10/02/02	0:08:43	77	10/31/02	10:58:44	122
10/01/02	20:04:35	33	10/02/02	0:44:55	78	10/31/02	11:03:34	123
10/01/02	20:05:55	34	10/02/02	0:59:42	79	10/31/02	11:08:36	124
10/01/02	20:07:50	35	10/02/02	1:17:33	80	10/31/02	11:10:30	125
10/01/02	20:09:42	36	10/02/02	6:35:59	81	10/31/02	11:15:54	126
10/01/02	20:15:19	37	10/03/02	2:39:31	82	10/31/02	11:20:52	127
10/01/02	20:28:11	38	10/23/02	9:46:54	83	11/03/02	10:11:21	128
10/01/02	20:39:53	39	10/23/02	9:51:58	84	11/03/02	10:37:23	129
10/01/02	20:41:56	40	10/23/02	10:03:39	85	11/03/02	10:37:24	130
10/01/02	20:43:41	41	10/24/02	9:11:03	86	11/03/02	10:51:58	131
10/01/02	20:45:23	42	10/26/02	20:16:34	87	11/09/02	2:29:05	132
10/01/02	20:46:49	43	10/26/02	20:37:33	88	11/09/02	13:25:40	133
10/01/02	20:48:21	44	10/26/02	20:49:07	89	11/13/02	14:22:43	133
10/01/02	20:49:57	45	10/26/02	20:54:49	90	11/13/02	15:34:01	0
10/01/02	20:51:59	46	10/26/02	21:03:38	91	11/15/02	11:33:56	1
10/01/02	20:56:04	47	10/26/02	21:09:05	92	11/16/02	9:25:00	2
10/01/02	20:59:22	48	10/26/02	21:17:37	93	11/25/02	10:57:22	3
10/01/02	21:03:05	49	10/26/02	21:25:16	94	11/25/02	11:00:13	4
10/01/02	21:07:32	50	10/26/02	21:36:43	95	11/25/02	11:26:00	5
10/01/02	21:14:47	51	10/26/02	21:47:39	96	11/25/02	11:36:13	6
10/01/02	21:18:52	52	10/27/02	10:01:59	97	12/19/02	11:55:45	7
10/01/02	21:23:54	53	10/27/02	10:04:38	98	12/20/02	12:43:10	8
10/01/02	21:28:31	54	10/27/02	10:09:09	99	12/20/02	12:46:27	9
10/01/02	21:36:32	55	10/27/02	10:12:17	100	12/20/02	12:49:01	10
10/01/02	21:41:22	56	10/27/02	10:16:54	101	12/20/02	12:53:31	11
10/01/02	21:44:42	57	10/27/02	10:19:47	102	12/20/02	12:57:17	12
10/01/02	21:47:11	58	10/27/02	10:24:32	103	12/20/02	13:07:20	13
10/01/02	21:50:44	59	10/27/02	10:27:46	104	12/20/02	13:12:34	14
10/01/02	21:53:50	60	10/27/02	10:32:38	105	12/23/02	13:30:43	15
10/01/02	21:58:53	61	10/27/02	10:35:44	106			

Appendix 3b. Precipitation data for the lower Saloon Gulch rain gauge.

Date	Time	Tip No. (0.01 in)	Date	Time	Tip No. (0.01 in)	Date	Time	Tip No. (0.01 in)
08/06/01	16:13:37	0	08/22/01	16:06:40	45	09/08/01	2:54:24	90
08/06/01	18:21:00	1	08/22/01	16:08:31	46	09/08/01	5:10:44	91
08/06/01	18:32:46	2	08/22/01	16:13:55	47	09/08/01	5:33:42	92
08/06/01	19:45:08	3	08/30/01	13:54:30	48	09/08/01	5:46:09	93
08/07/01	14:03:14	4	08/30/01	14:06:41	49	09/08/01	5:53:27	94
08/08/01	17:50:28	5	08/30/01	14:15:43	50	09/08/01	5:58:46	95
08/08/01	17:50:50	6	08/30/01	15:16:29	51	09/08/01	6:03:36	96
08/09/01	11:30:22	7	08/30/01	16:02:04	52	09/08/01	6:18:59	97
08/09/01	11:31:40	8	09/01/01	17:14:46	53	09/08/01	11:30:05	98
08/15/01	14:24:56	9	09/01/01	17:17:07	54	09/08/01	11:31:47	99
08/15/01	17:18:11	10	09/01/01	17:18:47	55	09/08/01	11:33:30	100
08/21/01	17:29:27	11	09/01/01	17:21:06	56	09/08/01	11:34:31	101
08/21/01	17:32:51	12	09/07/01	6:21:58	57	09/08/01	11:35:38	102
08/21/01	17:42:36	13	09/07/01	6:23:34	58	09/08/01	11:36:25	103
08/21/01	17:44:08	14	09/07/01	6:24:41	59	09/08/01	11:37:06	104
08/21/01	17:46:24	15	09/07/01	6:25:45	60	09/08/01	11:37:40	105
08/21/01	17:47:50	16	09/07/01	6:26:21	61	09/08/01	11:38:16	106
08/21/01	17:48:39	17	09/07/01	6:27:02	62	09/08/01	11:38:48	107
08/21/01	17:49:25	18	09/07/01	6:27:49	63	09/08/01	11:39:28	108
08/21/01	17:50:06	19	09/07/01	6:28:45	64	09/08/01	11:40:07	109
08/21/01	17:51:24	20	09/07/01	6:29:34	65	09/08/01	11:40:50	110
08/21/01	17:52:08	21	09/07/01	6:30:27	66	09/08/01	11:41:33	111
08/21/01	17:53:44	22	09/07/01	6:31:09	67	09/08/01	11:42:27	112
08/21/01	17:55:11	23	09/07/01	6:32:11	68	09/08/01	11:43:21	113
08/21/01	17:57:17	24	09/07/01	6:33:12	69	09/08/01	11:44:24	114
08/21/01	17:58:46	25	09/07/01	6:34:10	70	09/08/01	11:45:32	115
08/21/01	18:00:08	26	09/07/01	6:35:06	71	09/08/01	11:46:55	116
08/21/01	18:00:53	27	09/07/01	6:36:12	72	09/08/01	11:48:08	117
08/21/01	18:02:09	28	09/07/01	6:37:27	73	09/08/01	11:49:40	118
08/21/01	18:03:38	29	09/07/01	6:38:53	74	09/08/01	11:51:07	119
08/21/01	18:06:55	30	09/07/01	6:40:14	75	09/08/01	11:52:43	120
08/21/01	18:09:24	31	09/07/01	6:42:18	76	09/08/01	11:54:06	121
08/21/01	18:16:45	32	09/07/01	6:44:37	77	09/08/01	11:55:40	122
08/21/01	23:01:15	33	09/07/01	6:47:03	78	09/08/01	11:57:07	123
08/22/01	15:21:01	34	09/07/01	6:49:22	79	09/08/01	11:58:52	124
08/22/01	15:21:49	35	09/07/01	7:23:08	80	09/08/01	12:00:43	125
08/22/01	15:22:49	36	09/08/01	0:30:11	81	09/08/01	12:02:44	126
08/22/01	15:27:33	37	09/08/01	1:31:50	82	09/08/01	12:03:47	127
08/22/01	16:01:02	38	09/08/01	1:47:57	83	09/08/01	12:05:51	128
08/22/01	16:01:35	39	09/08/01	1:54:42	84	09/08/01	12:07:38	129
08/22/01	16:02:39	40	09/08/01	1:59:08	85	09/08/01	12:09:56	130
08/22/01	16:03:17	41	09/08/01	2:02:46	86	09/08/01	12:12:33	131
08/22/01	16:03:49	42	09/08/01	2:05:10	87	09/13/01	20:21:59	132
08/22/01	16:04:28	43	09/08/01	2:08:12	88	09/13/01	20:35:00	133
08/22/01	16:05:37	44	09/08/01	2:13:07	89	09/13/01	20:52:32	134

Appendix 3b. (continued).

		Tip No.			Tip No.			Tip No.
Date	Time	(0.01 in)	Date	Time	(0.01 in)	Date	Time	(0.01 in)
09/13/01	21:23:22	135	11/23/01	10:49:12	36	12/17/01	13:32:05	81
09/17/01	4:24:47	136	11/23/01	11:54:17	37	12/17/01	13:37:38	82
09/17/01	4:31:02	137	11/26/01	11:51:41	38	12/17/01	13:44:23	83
09/17/01	7:26:46	138	11/26/01	18:07:23	39	12/17/01	13:50:26	84
09/17/01	11:52:48	139	12/01/01	14:59:28	40	12/23/01	8:42:46	85
09/17/01	11:56:02	140	12/02/01	11:18:23	41	12/26/01	12:57:12	86
09/17/01	12:09:02	141	12/02/01	11:36:22	42	12/26/01	13:21:50	87
10/25/01	12:16:56	142	12/02/01	11:51:08	43	12/26/01	13:31:56	88
10/25/01	12:17:04	142	12/02/01	12:16:01	44	01/01/02	13:31:28	89
10/25/01	12:19:05	0	12/02/01	12:28:26	45	01/03/02	12:57:46	90
11/07/01	17:38:02	1	12/02/01	12:47:56	46	01/04/02	14:48:22	91
11/07/01	17:44:46	2	12/02/01	13:29:24	47	01/05/02	12:50:34	92
11/07/01	18:04:35	3	12/02/01	13:35:17	48	01/05/02	13:28:48	93
11/07/01	18:30:58	4	12/02/01	13:43:37	49	01/05/02	13:49:34	94
11/07/01	19:09:01	5	12/02/01	13:50:26	50	01/05/02	14:17:50	95
11/07/01	19:16:16	6	12/02/01	13:58:07	51	01/10/02	11:53:32	96
11/07/01	19:23:38	7	12/02/01	14:05:57	52	01/10/02	12:26:41	97
11/07/01	19:28:00	8	12/02/01	14:13:03	53	01/10/02	12:29:47	98
11/07/01	19:38:25	9	12/02/01	14:19:43	54	01/10/02	13:15:49	99
11/07/01	21:31:38	10	12/02/01	14:27:34	55	01/10/02	13:16:32	100
11/08/01	11:20:16	11	12/02/01	14:33:56	56	01/10/02	13:19:13	101
11/08/01	11:21:31	12	12/02/01	14:39:31	57	01/10/02	13:22:23	102
11/08/01	11:23:22	13	12/02/01	14:44:48	58	01/10/02	13:29:28	103
11/08/01	11:25:29	14	12/02/01	14:51:05	59	01/10/02	13:42:51	104
11/08/01	11:28:36	15	12/02/01	14:57:03	60	01/10/02	14:20:08	105
11/08/01	11:32:00	16	12/02/01	15:06:34	61	01/11/02	11:38:29	106
11/08/01	11:37:02	17	12/02/01	15:13:02	62	01/11/02	11:44:22	107
11/08/01	11:41:22	18	12/02/01	15:20:28	63	01/25/02	12:22:08	107
11/08/01	11:47:43	19	12/02/01	15:28:08	64	03/05/02	15:07:42	0
11/08/01	11:54:38	20	12/02/01	15:38:22	65	03/09/02	10:11:23	1
11/08/01	12:07:21	21	12/02/01	15:49:46	66	03/09/02	10:12:53	2
11/18/01	15:59:41	22	12/02/01	16:02:49	67	03/09/02	10:14:40	3
11/19/01	12:31:23	23	12/02/01	16:16:46	68	03/09/02	10:16:32	4
11/19/01	12:33:15	24	12/02/01	16:41:07	69	03/09/02	10:19:34	5
11/19/01	12:35:13	25	12/02/01	17:33:18	70	03/09/02	10:23:43	6
11/19/01	12:36:55	26	12/13/01	13:26:04	71	03/14/02	10:17:18	7
11/19/01	12:39:22	27	12/17/01	12:56:27	72	03/14/02	10:17:51	8
11/19/01	12:41:01	28	12/17/01	12:59:25	73	03/14/02	10:18:25	9
11/19/01	12:43:06	29	12/17/01	13:01:48	74	03/14/02	10:18:55	10
11/19/01	12:44:18	30	12/17/01	13:05:04	75	03/14/02	10:19:41	11
11/19/01	12:47:18	31	12/17/01	13:13:41	76	03/14/02	10:20:27	12
11/22/01	20:53:55	32	12/17/01	13:16:32	77	03/14/02	10:21:24	13
11/23/01	2:19:40	33	12/17/01	13:18:42	78	03/14/02	10:22:12	14
11/23/01	8:11:09	34	12/17/01	13:21:45	79	03/14/02	10:23:08	15
11/23/01	10:23:49	35	12/17/01	13:25:43	80	03/14/02	10:24:02	16

Appendix 3b. (continued).

Tip No.			Tip No.			Tip No.		
Date	Time	(0.01 in)	Date	Time	(0.01 in)	Date	Time	(0.01 in)
03/14/02	10:25:19	17	05/12/02	8:26:20	62	05/24/02	1:05:38	37
03/14/02	10:26:43	18	05/12/02	9:23:58	63	05/24/02	1:41:07	38
03/14/02	10:27:34	19	05/12/02	9:36:22	64	05/24/02	2:49:34	39
03/14/02	10:28:33	20	05/12/02	9:55:38	65	05/24/02	7:25:21	40
03/14/02	10:30:15	21	05/12/02	10:08:19	66	05/24/02	7:28:04	41
03/15/02	9:51:41	22	05/12/02	10:32:42	67	05/24/02	7:34:03	42
03/15/02	13:16:13	23	05/14/02	16:38:16	68	05/24/02	7:37:36	43
03/15/02	13:22:15	24	05/14/02	16:38:23	68	05/24/02	7:39:42	44
03/15/02	13:36:20	25	05/14/02	15:41:34	0	05/24/02	7:41:45	45
03/15/02	13:40:01	26	05/16/02	13:43:18	1	05/24/02	7:46:48	46
03/15/02	13:47:33	27	05/16/02	13:53:01	2	05/24/02	7:49:10	47
03/15/02	13:55:57	28	05/16/02	14:02:47	3	05/24/02	7:53:44	48
03/15/02	14:12:54	29	05/16/02	14:05:31	4	05/24/02	7:58:11	49
03/15/02	14:37:40	30	05/16/02	14:08:01	5	05/24/02	8:04:37	50
03/16/02	9:50:11	31	05/16/02	15:44:36	6	05/24/02	8:09:15	51
03/16/02	9:59:52	32	05/16/02	16:24:51	7	05/24/02	8:18:16	52
03/16/02	10:08:59	33	05/16/02	16:31:07	8	05/24/02	8:30:10	53
03/16/02	11:14:10	34	05/16/02	16:44:04	9	05/24/02	10:09:25	54
03/19/02	10:07:30	35	05/16/02	16:53:42	10	05/24/02	10:16:57	55
03/19/02	10:08:31	36	05/16/02	16:59:41	11	05/24/02	10:22:47	56
03/19/02	10:10:42	37	05/16/02	17:02:45	12	05/24/02	10:27:39	57
03/19/02	10:12:36	38	05/16/02	17:04:31	13	05/24/02	10:31:17	58
03/19/02	10:14:31	39	05/16/02	17:06:25	14	05/24/02	10:33:44	59
03/19/02	10:15:25	40	05/16/02	17:09:17	15	05/24/02	10:37:44	60
03/19/02	10:16:31	41	05/16/02	18:22:53	16	05/24/02	10:40:44	61
03/19/02	10:17:41	42	05/16/02	20:16:52	17	05/24/02	11:13:20	62
03/19/02	10:19:28	43	05/20/02	15:34:27	18	05/24/02	11:27:56	63
03/20/02	14:59:46	44	05/20/02	15:49:31	19	05/24/02	11:29:52	64
03/25/02	10:04:36	45	05/23/02	19:25:13	20	05/24/02	11:31:31	65
03/25/02	10:05:20	46	05/23/02	19:33:20	21	05/24/02	11:32:22	66
03/25/02	10:06:16	47	05/23/02	19:37:53	22	05/24/02	11:33:07	67
03/25/02	10:06:59	48	05/23/02	19:42:11	23	05/24/02	11:34:24	68
03/25/02	10:07:42	49	05/23/02	19:48:04	24	05/24/02	11:35:42	69
03/25/02	10:08:38	50	05/23/02	19:52:34	25	05/24/02	11:37:48	70
03/25/02	10:09:28	51	05/23/02	19:56:45	26	05/24/02	11:40:09	71
03/25/02	10:10:08	52	05/23/02	20:00:37	27	05/24/02	11:43:39	72
03/25/02	10:11:54	53	05/23/02	20:05:34	28	05/27/02	17:53:16	73
03/25/02	10:13:42	54	05/23/02	20:12:47	29	05/27/02	17:57:05	74
03/25/02	10:14:44	55	05/23/02	20:22:02	30	06/03/02	23:14:07	75
03/25/02	10:16:12	56	05/23/02	20:26:53	31	06/03/02	23:24:45	76
05/11/02	23:29:53	57	05/23/02	20:33:53	32	06/03/02	23:32:00	77
05/12/02	0:16:27	58	05/23/02	20:43:22	33	06/03/02	23:54:13	78
05/12/02	0:58:55	59	05/23/02	21:13:26	34	06/04/02	0:03:29	79
05/12/02	1:36:45	60	05/24/02	0:11:48	35	06/04/02	0:18:43	80
05/12/02	7:42:45	61	05/24/02	0:40:39	36	06/04/02	0:22:51	81

Appendix 3b. (continued).

Date	Time	Tip No. (0.01 in)	Date	Time	Tip No. (0.01 in)	Date	Time	Tip No. (0.01 in)
06/04/02	0:30:49	82	06/20/02	16:48:24	127	07/05/02	22:40:24	172
06/04/02	0:37:22	83	06/20/02	16:49:12	128	07/06/02	2:19:55	173
06/04/02	0:46:55	84	06/20/02	16:49:48	129	07/06/02	2:29:01	174
06/04/02	1:58:27	85	06/20/02	16:50:36	130	07/06/02	2:41:00	175
06/04/02	7:29:49	86	06/20/02	16:51:08	131	07/06/02	2:56:14	176
06/04/02	8:11:58	87	06/20/02	16:52:32	132	07/06/02	3:12:55	177
06/04/02	8:16:19	88	06/20/02	16:54:01	133	07/06/02	3:19:07	178
06/04/02	8:24:44	89	06/20/02	19:56:17	134	07/06/02	3:26:04	179
06/04/02	8:46:11	90	06/20/02	20:01:26	135	07/06/02	3:44:26	180
06/04/02	9:38:51	91	06/20/02	20:04:22	136	07/06/02	4:59:49	181
06/04/02	10:29:12	92	06/20/02	20:05:23	137	07/06/02	5:11:10	182
06/04/02	10:56:14	93	06/20/02	20:06:19	138	07/06/02	5:13:15	183
06/04/02	13:54:29	94	06/20/02	20:07:03	139	07/06/02	5:16:05	184
06/14/02	14:56:25	95	06/20/02	20:07:56	140	07/06/02	5:19:06	185
06/14/02	14:58:15	96	06/20/02	20:08:38	141	07/06/02	5:24:19	186
06/19/02	22:40:54	97	06/20/02	20:09:50	142	07/06/02	5:26:06	187
06/19/02	22:43:22	98	06/20/02	20:10:21	143	07/06/02	5:27:01	188
06/19/02	22:49:37	99	06/20/02	20:11:20	144	07/06/02	5:27:49	189
06/19/02	22:55:27	100	06/20/02	20:12:01	145	07/06/02	5:28:30	190
06/19/02	22:57:20	101	06/20/02	20:17:02	146	07/06/02	5:29:08	191
06/19/02	22:58:46	102	06/20/02	20:26:00	147	07/06/02	5:29:59	192
06/19/02	23:00:43	103	06/20/02	20:43:11	148	07/06/02	5:30:50	193
06/19/02	23:03:01	104	06/20/02	20:45:23	149	07/06/02	5:32:16	194
06/19/02	23:04:27	105	06/20/02	20:51:26	150	07/06/02	5:33:48	195
06/19/02	23:04:54	106	06/20/02	21:11:12	151	07/06/02	5:35:02	196
06/19/02	23:05:33	107	06/21/02	17:31:43	152	07/06/02	5:36:05	197
06/19/02	23:06:12	108	06/21/02	17:43:25	153	07/06/02	5:37:04	198
06/19/02	23:06:40	109	06/21/02	17:49:03	154	07/06/02	5:37:40	199
06/19/02	23:07:19	110	06/21/02	17:50:00	155	07/06/02	5:38:24	200
06/19/02	23:08:20	111	06/21/02	17:54:08	156	07/06/02	5:38:54	201
06/19/02	23:10:26	112	06/21/02	18:01:48	157	07/06/02	5:39:56	202
06/19/02	23:11:25	113	06/21/02	18:06:19	158	07/06/02	5:40:34	203
06/19/02	23:11:52	114	06/21/02	18:07:57	159	07/06/02	5:40:51	204
06/19/02	23:12:22	115	06/21/02	18:09:01	160	07/06/02	5:41:12	205
06/19/02	23:12:58	116	06/21/02	20:45:14	161	07/06/02	5:42:12	206
06/19/02	23:13:29	117	06/21/02	21:15:56	162	07/06/02	5:43:32	207
06/19/02	23:14:16	118	06/23/02	19:16:31	163	07/06/02	5:44:03	208
06/19/02	23:16:29	119	07/05/02	20:24:44	164	07/06/02	5:44:26	209
06/20/02	15:29:35	120	07/05/02	21:02:27	165	07/06/02	5:44:56	210
06/20/02	15:56:10	121	07/05/02	21:47:38	166	07/06/02	5:45:22	211
06/20/02	16:33:33	122	07/05/02	22:19:46	167	07/06/02	5:45:40	212
06/20/02	16:45:40	123	07/05/02	22:36:08	168	07/06/02	5:45:53	213
06/20/02	16:46:30	124	07/05/02	22:37:05	169	07/06/02	5:46:15	214
06/20/02	16:46:59	125	07/05/02	22:37:57	170	07/06/02	5:46:36	215
06/20/02	16:47:44	126	07/05/02	22:38:47	171	07/06/02	5:47:07	216

Appendix 3b. (continued).

Tip No.			Tip No.			Tip No.		
Date	Time	(0.01 in)	Date	Time	(0.01 in)	Date	Time	(0.01 in)
07/06/02	5:47:22	217	07/21/02	20:34:51	18	07/21/02	20:38:35	63
07/06/02	5:47:50	218	07/21/02	20:35:16	19	07/21/02	20:38:37	64
07/06/02	5:48:16	219	07/21/02	20:36:01	20	07/21/02	20:38:45	65
07/06/02	5:48:46	220	07/21/02	20:36:35	21	07/21/02	20:38:47	66
07/06/02	5:49:08	221	07/21/02	20:37:08	22	07/21/02	20:38:48	67
07/06/02	5:49:32	222	07/21/02	20:37:09	23	07/21/02	20:38:50	68
07/06/02	5:49:49	223	07/21/02	20:37:32	24	07/21/02	20:38:51	69
07/06/02	5:50:11	224	07/21/02	20:37:33	25	07/21/02	20:38:53	70
07/06/02	5:50:32	225	07/21/02	20:37:35	26	07/21/02	20:38:54	71
07/06/02	5:50:58	226	07/21/02	20:37:37	27	07/21/02	20:38:56	72
07/06/02	5:51:23	227	07/21/02	20:37:38	28	07/21/02	20:38:58	73
07/06/02	5:51:58	228	07/21/02	20:37:40	29	07/21/02	20:38:59	74
07/06/02	5:52:54	229	07/21/02	20:37:41	30	07/21/02	20:39:01	75
07/06/02	5:53:48	230	07/21/02	20:37:43	31	07/21/02	20:39:02	76
07/06/02	5:54:24	231	07/21/02	20:37:44	32	07/21/02	20:39:04	77
07/06/02	5:55:29	232	07/21/02	20:37:46	33	07/21/02	20:39:05	78
07/06/02	5:57:04	233	07/21/02	20:37:48	34	07/21/02	20:39:07	79
07/06/02	5:59:30	234	07/21/02	20:37:49	35	07/21/02	20:39:08	80
07/06/02	6:01:47	235	07/21/02	20:37:51	36	07/21/02	20:39:10	81
07/06/02	6:05:01	236	07/21/02	20:37:52	37	07/21/02	20:39:11	82
07/06/02	6:09:24	237	07/21/02	20:37:54	38	07/21/02	20:39:12	83
07/06/02	6:14:57	238	07/21/02	20:37:55	39	07/21/02	20:39:14	84
07/06/02	6:23:54	239	07/21/02	20:37:57	40	07/21/02	20:39:15	85
07/06/02	6:45:33	240	07/21/02	20:37:58	41	07/21/02	20:39:17	86
07/06/02	6:58:18	241	07/21/02	20:38:00	42	07/21/02	20:39:18	87
07/15/02	17:28:41	242	07/21/02	20:38:01	43	07/21/02	20:39:20	88
07/15/02	17:28:49	242	07/21/02	20:38:02	44	07/21/02	20:39:21	89
07/15/02	18:14:45	0	07/21/02	20:38:04	45	07/21/02	20:39:23	90
07/15/02	18:15:04	1	07/21/02	20:38:05	46	07/21/02	20:39:25	91
07/21/02	20:25:35	2	07/21/02	20:38:07	47	07/21/02	20:39:26	92
07/21/02	20:25:59	3	07/21/02	20:38:08	48	07/21/02	20:39:28	93
07/21/02	20:26:37	4	07/21/02	20:38:10	49	07/21/02	20:39:29	94
07/21/02	20:26:58	5	07/21/02	20:38:11	50	07/21/02	20:39:31	95
07/21/02	20:27:19	6	07/21/02	20:38:13	51	07/21/02	20:39:32	96
07/21/02	20:27:37	7	07/21/02	20:38:15	52	07/21/02	20:39:34	97
07/21/02	20:28:02	8	07/21/02	20:38:16	53	07/21/02	20:39:35	98
07/21/02	20:28:26	9	07/21/02	20:38:18	54	07/21/02	20:39:37	99
07/21/02	20:29:00	10	07/21/02	20:38:19	55	07/21/02	20:40:09	100
07/21/02	20:29:33	11	07/21/02	20:38:23	56	07/21/02	20:49:14	101
07/21/02	20:30:16	12	07/21/02	20:38:26	57	07/21/02	20:49:31	102
07/21/02	20:32:08	13	07/21/02	20:38:28	58	07/21/02	20:49:32	103
07/21/02	20:32:48	14	07/21/02	20:38:29	59	07/21/02	20:49:33	104
07/21/02	20:33:13	15	07/21/02	20:38:31	60	07/21/02	20:49:35	105
07/21/02	20:33:47	16	07/21/02	20:38:32	61	07/21/02	20:49:36	106
07/21/02	20:34:25	17	07/21/02	20:38:34	62	07/21/02	20:49:38	107

Appendix 3b. (continued).

Date	Time	Tip No. (0.01 in)	Date	Time	Tip No. (0.01 in)	Date	Time	Tip No. (0.01 in)
07/21/02	20:49:39	108	07/23/02	19:45:22	153	08/04/02	0:44:14	255
07/21/02	20:49:41	109	07/23/02	19:45:23	154	08/04/02	14:47:21	256
07/21/02	20:49:43	110	07/23/02	19:45:25	155	08/05/02	13:51:29	257
07/21/02	20:49:44	111	07/23/02	19:45:27	156	08/05/02	14:00:14	258
07/21/02	20:49:50	112	07/23/02	19:45:28	157	08/05/02	14:01:51	259
07/21/02	20:51:11	113	07/23/02	19:45:30	158	08/05/02	14:05:57	260
07/21/02	20:52:04	114	07/23/02	19:45:33	159	08/05/02	14:56:37	261
07/21/02	20:53:38	115	07/23/02	19:45:41	160	08/05/02	19:14:10	262
07/21/02	20:54:23	116	07/23/02	19:46:13	161	08/06/02	16:41:17	263
07/21/02	20:56:25	117	07/23/02	19:46:14	162	08/06/02	16:44:57	264
07/21/02	20:58:55	118	07/23/02	19:46:17	163	08/06/02	16:48:04	265
07/21/02	21:02:40	119	07/23/02	19:46:19	164	08/06/02	17:08:22	266
07/21/02	21:06:33	120	07/23/02	19:46:21	165	08/06/02	17:09:48	267
07/21/02	21:12:38	121	07/23/02	19:46:33	166	08/06/02	17:10:32	268
07/21/02	21:19:32	122	07/23/02	19:46:47	167	08/06/02	17:12:27	269
07/22/02	15:36:16	123	07/23/02	19:46:49	168	08/06/02	17:14:58	270
07/22/02	16:13:50	124	07/23/02	19:46:59	169	08/06/02	20:21:41	271
07/23/02	19:31:05	125	07/23/02	19:47:01	170	08/07/02	16:43:37	272
07/23/02	19:35:23	126	07/23/02	19:47:02	171	08/07/02	17:02:43	273
07/23/02	19:35:42	127	07/23/02	19:47:04	172	08/07/02	19:21:13	274
07/23/02	19:40:05	128	07/23/02	19:47:05	173	08/19/02	16:26:30	275
07/23/02	19:42:02	129	07/23/02	19:47:08	174	08/21/02	16:16:31	276
07/23/02	19:42:14	130	07/23/02	19:47:10	175	08/21/02	16:18:39	277
07/23/02	19:43:53	131	07/23/02	19:47:12	176	08/21/02	16:19:31	278
07/23/02	19:44:02	132	<i>177-236 Rain gauge relocated</i>			08/21/02	16:20:27	279
07/23/02	19:44:12	133	7/26/2002	9:34:22	177	08/21/02	16:21:08	280
07/23/02	19:44:30	134	7/26/2002	9:46:15	236	08/21/02	16:21:49	281
07/23/02	19:44:34	135	07/29/02	19:13:14	237	08/21/02	16:23:10	282
07/23/02	19:44:37	136	07/30/02	15:54:49	238	08/21/02	16:24:57	283
07/23/02	19:44:42	137	08/03/02	19:41:38	239	08/21/02	16:27:06	284
07/23/02	19:44:44	138	08/03/02	19:50:41	240	08/21/02	16:30:18	285
07/23/02	19:44:47	139	08/03/02	20:12:09	241	08/21/02	16:31:23	286
07/23/02	19:44:49	140	08/03/02	20:31:15	242	08/21/02	16:32:39	287
07/23/02	19:44:53	141	08/03/02	21:12:19	243	08/21/02	16:33:55	288
07/23/02	19:44:57	142	08/03/02	21:58:51	244	08/21/02	16:36:50	289
07/23/02	19:45:01	143	08/03/02	22:01:38	245	08/21/02	16:39:00	290
07/23/02	19:45:03	144	08/03/02	22:05:03	246	08/21/02	17:05:46	291
07/23/02	19:45:04	145	08/03/02	22:08:37	247	08/21/02	21:33:47	292
07/23/02	19:45:06	146	08/03/02	22:10:26	248	08/21/02	22:12:25	293
07/23/02	19:45:09	147	08/03/02	22:16:05	249	08/22/02	15:46:13	294
07/23/02	19:45:11	148	08/03/02	22:22:22	250	08/22/02	16:56:48	295
07/23/02	19:45:12	149	08/03/02	22:30:13	251	08/27/02	20:29:47	296
07/23/02	19:45:14	150	08/03/02	22:36:14	252	08/27/02	20:33:11	297
07/23/02	19:45:17	151	08/03/02	23:19:16	253	08/27/02	20:38:11	298
07/23/02	19:45:18	152	08/04/02	0:41:03	254	08/27/02	20:39:45	299

Appendix 3b. (continued).

Tip No.			Tip No.			Tip No.		
Date	Time	(0.01 in)	Date	Time	(0.01 in)	Date	Time	(0.01 in)
08/27/02	20:40:54	300	09/09/02	22:11:11	28	09/12/02	16:27:06	73
08/27/02	20:43:00	301	09/09/02	23:00:06	29	09/12/02	16:27:48	74
08/27/02	21:01:22	302	09/09/02	23:26:15	30	09/12/02	16:28:21	75
08/27/02	21:04:34	303	09/09/02	23:31:57	31	09/12/02	16:28:39	76
08/27/02	21:05:58	304	09/09/02	23:40:33	32	09/12/02	16:28:52	77
08/27/02	21:08:56	305	09/09/02	23:50:07	33	09/12/02	16:29:04	78
08/28/02	15:00:37	306	09/09/02	23:55:52	34	09/12/02	16:29:14	79
08/28/02	16:02:11	307	09/10/02	0:02:47	35	09/12/02	16:29:24	80
08/28/02	16:03:12	308	09/10/02	0:06:32	36	09/12/02	16:29:34	81
08/28/02	16:05:05	309	09/10/02	0:09:27	37	09/12/02	16:29:42	82
08/28/02	16:12:34	310	09/10/02	0:11:39	38	09/12/02	16:29:50	83
08/29/02	14:59:46	311	09/10/02	0:13:18	39	09/12/02	16:29:59	84
08/29/02	15:01:26	312	09/10/02	0:14:36	40	09/12/02	16:30:10	85
08/29/02	15:03:24	313	09/10/02	0:16:19	41	09/12/02	16:30:19	86
08/29/02	15:04:29	314	09/10/02	0:18:10	42	09/12/02	16:30:36	87
08/29/02	15:11:15	315	09/10/02	0:21:47	43	09/12/02	16:30:45	88
08/31/02	14:45:22	315	09/10/02	0:32:48	44	09/12/02	16:30:53	89
08/31/02	15:00:55	0	09/10/02	0:41:39	45	09/12/02	16:31:02	90
09/08/02	23:36:59	1	09/10/02	0:49:48	46	09/12/02	16:31:11	91
09/08/02	23:40:36	2	09/10/02	1:06:01	47	09/12/02	16:31:18	92
09/08/02	23:42:27	3	09/10/02	1:15:16	48	09/12/02	16:31:23	93
09/08/02	23:43:25	4	09/10/02	2:19:29	49	09/12/02	16:31:29	94
09/08/02	23:44:10	5	09/10/02	3:00:13	50	09/12/02	16:31:37	95
09/08/02	23:45:47	6	09/10/02	3:32:49	51	09/12/02	16:31:42	96
09/08/02	23:54:54	7	09/10/02	3:48:48	52	09/12/02	16:31:48	97
09/09/02	0:02:04	8	09/10/02	4:04:29	53	09/12/02	16:31:55	98
09/09/02	0:05:30	9	09/10/02	4:19:41	54	09/12/02	16:32:01	99
09/09/02	0:06:56	10	09/10/02	4:29:14	55	09/12/02	16:32:08	100
09/09/02	0:11:07	11	09/10/02	4:44:49	56	09/12/02	16:32:15	101
09/09/02	0:42:26	12	09/10/02	5:11:43	57	09/12/02	16:32:25	102
09/09/02	2:53:36	13	09/10/02	6:04:54	58	09/12/02	16:32:36	103
09/09/02	14:14:36	14	09/10/02	6:32:23	59	09/12/02	16:32:47	104
09/09/02	14:17:22	15	09/10/02	6:48:47	60	09/12/02	16:33:08	105
09/09/02	20:38:58	16	09/10/02	7:09:29	61	09/12/02	16:33:46	106
09/09/02	20:47:37	17	09/10/02	7:36:44	62	09/12/02	16:34:39	107
09/09/02	20:51:18	18	09/10/02	7:49:28	63	09/12/02	16:35:23	108
09/09/02	20:56:16	19	09/10/02	8:23:05	64	09/12/02	16:36:19	109
09/09/02	20:59:49	20	09/12/02	16:22:15	65	09/12/02	16:36:58	110
09/09/02	21:04:39	21	09/12/02	16:22:55	66	09/12/02	16:37:18	111
09/09/02	21:10:18	22	09/12/02	16:23:37	67	09/12/02	16:37:42	112
09/09/02	21:13:27	23	09/12/02	16:24:22	68	09/12/02	16:38:03	113
09/09/02	21:15:36	24	09/12/02	16:24:57	69	09/12/02	16:38:26	114
09/09/02	21:19:35	25	09/12/02	16:25:26	70	09/12/02	16:39:01	115
09/09/02	21:25:38	26	09/12/02	16:25:54	71	09/12/02	16:39:33	116
09/09/02	21:32:57	27	09/12/02	16:26:33	72	09/12/02	16:40:05	117

Appendix 3b. (continued).

Date	Time	Tip No. (0.01 in)	Date	Time	Tip No. (0.01 in)	Date	Time	Tip No. (0.01 in)
09/12/02	16:40:43	118	09/18/02	21:55:46	163	10/01/02	21:07:50	41
09/12/02	16:41:20	119	09/18/02	22:56:13	164	10/01/02	21:13:32	42
09/12/02	16:42:25	120	09/19/02	1:02:01	165	10/01/02	21:18:55	43
09/12/02	16:43:37	121	09/20/02	14:46:15	165	10/01/02	21:23:26	44
09/12/02	16:45:47	122	09/20/02	14:30:18	0	10/01/02	21:30:31	45
09/12/02	16:49:07	123	09/26/02	4:02:48	1	10/01/02	21:36:58	46
09/12/02	16:51:28	124	09/26/02	4:13:17	2	10/01/02	21:42:19	47
09/12/02	16:52:35	125	09/26/02	4:22:01	3	10/01/02	21:45:38	48
09/12/02	16:54:23	126	09/26/02	4:26:31	4	10/01/02	21:48:53	49
09/12/02	17:00:37	127	09/26/02	5:08:40	5	10/01/02	21:51:49	50
09/13/02	12:35:57	128	09/26/02	10:36:06	6	10/01/02	21:55:00	51
09/13/02	13:04:57	129	09/26/02	10:39:54	7	10/01/02	21:57:44	52
09/13/02	13:34:05	130	09/26/02	10:44:36	8	10/01/02	22:00:53	53
09/18/02	13:31:34	131	09/26/02	10:49:24	9	10/01/02	22:06:23	54
09/18/02	14:13:06	132	09/26/02	10:56:32	10	10/01/02	22:13:22	55
09/18/02	14:18:10	133	09/26/02	11:17:26	11	10/01/02	22:22:59	56
09/18/02	14:26:07	134	10/01/02	18:10:29	12	10/01/02	22:31:20	57
09/18/02	14:35:17	135	10/01/02	19:00:01	13	10/01/02	22:56:10	58
09/18/02	14:52:47	136	10/01/02	19:09:30	14	10/01/02	23:11:16	59
09/18/02	17:37:07	137	10/01/02	19:15:08	15	10/01/02	23:18:29	60
09/18/02	18:03:13	138	10/01/02	19:22:52	16	10/01/02	23:27:14	61
09/18/02	18:08:55	139	10/01/02	19:32:59	17	10/01/02	23:38:35	62
09/18/02	18:12:36	140	10/01/02	19:38:09	18	10/01/02	23:47:07	63
09/18/02	18:16:09	141	10/01/02	19:41:48	19	10/01/02	23:59:52	64
09/18/02	18:21:12	142	10/01/02	19:44:16	20	10/02/02	0:09:33	65
09/18/02	18:27:29	143	10/01/02	19:47:42	21	10/02/02	0:16:17	66
09/18/02	18:37:39	144	10/01/02	19:52:02	22	10/02/02	0:22:06	67
09/18/02	18:45:48	145	10/01/02	19:58:17	23	10/02/02	0:38:49	68
09/18/02	18:49:53	146	10/01/02	20:03:27	24	10/03/02	2:32:20	69
09/18/02	18:54:32	147	10/01/02	20:06:00	25	10/03/02	2:40:28	70
09/18/02	18:58:15	148	10/01/02	20:08:14	26	10/03/02	2:57:49	71
09/18/02	19:01:33	149	10/01/02	20:10:15	27	10/23/02	9:49:26	72
09/18/02	19:04:54	150	10/01/02	20:13:07	28	10/24/02	10:19:49	73
09/18/02	19:09:13	151	10/01/02	20:20:57	29	10/24/02	11:10:20	74
09/18/02	19:14:59	152	10/01/02	20:31:06	30	10/26/02	20:22:13	75
09/18/02	19:21:15	153	10/01/02	20:38:13	31	10/26/02	20:41:05	76
09/18/02	19:26:14	154	10/01/02	20:42:09	32	10/26/02	20:52:20	77
09/18/02	19:35:20	155	10/01/02	20:44:47	33	10/26/02	21:00:48	78
09/18/02	19:41:37	156	10/01/02	20:46:52	34	10/26/02	21:06:23	79
09/18/02	19:47:37	157	10/01/02	20:49:01	35	10/26/02	21:10:47	80
09/18/02	19:59:22	158	10/01/02	20:50:43	36	10/26/02	21:15:09	81
09/18/02	20:09:15	159	10/01/02	20:52:29	37	10/26/02	21:18:03	82
09/18/02	20:20:58	160	10/01/02	20:54:58	38	10/26/02	21:21:20	83
09/18/02	20:51:04	161	10/01/02	20:58:23	39	10/26/02	21:26:02	84
09/18/02	21:24:32	162	10/01/02	21:02:44	40	10/26/02	21:33:07	85

Appendix 3b. (continued).

Tip No.			Tip No.		
Date	Time	(0.01 in)	Date	Time	(0.01 in)
10/26/02	21:38:55	86	11/03/02	8:25:32	131
10/26/02	21:43:06	87	11/03/02	10:04:15	132
10/26/02	21:45:29	88	11/03/02	10:04:19	133
10/26/02	21:47:47	89	11/03/02	10:09:50	134
10/26/02	21:49:42	90	11/03/02	10:13:28	135
10/26/02	21:51:21	91	11/03/02	10:26:22	136
10/26/02	21:54:38	92	11/09/02	13:03:01	137
10/26/02	21:57:05	93	11/12/02	11:02:19	138
10/26/02	21:59:15	94	11/13/02	12:52:23	138
10/26/02	22:01:21	95	11/13/02	2:06:21	0
10/26/02	22:03:33	96	11/15/02	9:58:43	1
10/26/02	22:05:33	97	11/15/02	11:21:47	2
10/26/02	22:08:05	98	11/16/02	11:59:04	3
10/26/02	22:10:11	99	11/25/02	11:50:49	4
10/26/02	22:12:02	100	11/25/02	12:13:23	5
10/26/02	22:14:06	101	11/25/02	12:25:12	6
10/26/02	22:16:15	102	11/25/02	12:32:33	7
10/26/02	22:19:04	103	12/19/02	1:28:04	8
10/26/02	22:21:47	104	12/20/02	1:50:48	9
10/26/02	22:23:56	105	12/20/02	1:53:38	10
10/26/02	22:26:23	106	12/20/02	1:58:31	11
10/26/02	22:30:24	107	12/20/02	2:03:20	12
10/26/02	22:36:00	108	12/20/02	2:08:27	13
10/26/02	22:46:29	109	12/20/02	2:15:46	14
10/26/02	23:09:42	110	12/20/02	2:25:50	15
10/27/02	0:02:30	111	12/20/02	2:32:37	16
10/28/02	23:34:49	112	12/20/02	2:45:45	17
10/28/02	23:52:09	113	12/20/02	2:55:41	18
10/29/02	1:01:11	114	12/20/02	3:08:47	19
10/29/02	11:42:58	115	12/20/02	3:17:13	20
10/29/02	12:04:13	116	12/20/02	3:34:48	21
10/30/02	10:40:34	117	12/20/02	3:48:48	22
10/30/02	11:48:57	118	12/20/02	4:06:06	23
10/30/02	11:59:21	119	12/20/02	4:26:55	24
10/30/02	12:16:01	120	12/21/02	12:55:45	25
10/30/02	12:27:52	121	12/21/02	1:22:09	26
10/30/02	13:26:14	122	12/21/02	1:51:23	27
10/31/02	9:52:26	123	12/22/02	12:44:39	28
10/31/02	10:15:21	124	12/23/02	1:34:43	29
10/31/02	10:19:06	125			
10/31/02	10:22:35	126			
10/31/02	10:27:06	127			
10/31/02	10:31:23	128			
10/31/02	10:35:19	129			
10/31/02	10:43:19	130			

Appendix 3c. Precipitation data for the Trumbull rain gauge.

Date	Time	Tip No. (0.01 in)	Date	Time	Tip No. (0.01 in)	Date	Time	Tip No. (0.01 in)
08/06/01	16:48:41	0	08/10/01	18:14:51	45	08/15/01	17:35:35	90
08/06/01	18:10:55	1	08/10/01	18:18:02	46	08/15/01	22:22:45	91
08/06/01	18:24:14	2	08/10/01	18:21:46	47	08/15/01	22:23:53	92
08/07/01	14:39:03	3	08/10/01	18:26:12	48	08/15/01	22:25:01	93
08/07/01	17:35:05	4	08/10/01	18:32:07	49	08/16/01	6:41:35	94
08/07/01	17:40:34	5	08/10/01	19:11:04	50	08/16/01	14:32:39	95
08/07/01	17:46:53	6	08/10/01	20:36:35	51	08/21/01	17:37:20	96
08/08/01	17:33:08	7	08/10/01	20:51:05	52	08/21/01	17:38:54	97
08/08/01	17:34:35	8	08/11/01	1:36:42	53	08/21/01	17:41:24	98
08/08/01	17:35:42	9	08/12/01	14:32:18	54	08/21/01	17:49:24	99
08/08/01	17:36:47	10	08/13/01	15:37:25	55	08/21/01	17:53:00	100
08/08/01	17:37:40	11	08/13/01	15:39:15	56	08/21/01	17:58:03	101
08/08/01	17:39:18	12	08/13/01	15:40:19	57	08/21/01	18:02:39	102
08/08/01	17:41:06	13	08/13/01	15:41:06	58	08/21/01	18:03:35	103
08/08/01	17:49:41	14	08/14/01	13:15:58	59	08/21/01	18:05:38	104
08/08/01	17:52:25	15	08/14/01	13:17:29	60	08/21/01	18:07:41	105
08/08/01	17:54:03	16	08/14/01	13:18:36	61	08/21/01	18:09:22	106
08/08/01	17:54:41	17	08/14/01	13:19:59	62	08/21/01	18:10:37	107
08/08/01	17:55:34	18	08/14/01	13:21:05	63	08/21/01	18:11:28	108
08/08/01	17:57:05	19	08/14/01	13:54:51	64	08/21/01	18:11:58	109
08/08/01	18:05:08	20	08/14/01	15:03:46	65	08/21/01	18:13:10	110
08/08/01	18:12:29	21	08/14/01	15:20:28	66	08/21/01	18:13:41	111
08/08/01	18:16:33	22	08/14/01	15:23:38	67	08/21/01	18:14:09	112
08/08/01	18:31:25	23	08/14/01	15:29:26	68	08/21/01	18:14:38	113
08/08/01	19:13:09	24	08/14/01	15:30:35	69	08/21/01	18:15:18	114
08/08/01	19:15:24	25	08/14/01	15:32:20	70	08/21/01	18:15:59	115
08/08/01	19:19:01	26	08/14/01	15:42:28	71	08/21/01	18:16:52	116
08/08/01	23:19:42	27	08/14/01	15:56:10	72	08/21/01	18:17:56	117
08/09/01	11:03:09	28	08/14/01	16:00:01	73	08/21/01	18:19:12	118
08/09/01	11:10:19	29	08/14/01	16:02:13	74	08/21/01	18:20:28	119
08/09/01	11:15:37	30	08/14/01	16:03:58	75	08/21/01	18:22:34	120
08/09/01	11:23:40	31	08/14/01	16:06:21	76	08/21/01	18:26:20	121
08/09/01	11:26:21	32	08/14/01	16:09:16	77	08/21/01	18:31:35	122
08/09/01	11:28:08	33	08/14/01	16:13:49	78	08/21/01	18:38:43	123
08/09/01	11:29:20	34	08/14/01	16:23:09	79	08/21/01	18:50:47	124
08/09/01	11:30:22	35	08/14/01	22:14:20	80	08/22/01	0:14:36	125
08/09/01	11:31:32	36	08/15/01	2:27:00	81	08/22/01	15:25:09	126
08/09/01	11:32:38	37	08/15/01	2:31:29	82	08/22/01	15:34:46	127
08/09/01	11:34:12	38	08/15/01	2:36:46	83	08/22/01	15:37:07	128
08/09/01	11:38:40	39	08/15/01	2:44:36	84	08/22/01	15:40:31	129
08/09/01	11:44:33	40	08/15/01	2:51:23	85	08/22/01	15:54:25	130
08/09/01	14:30:58	41	08/15/01	3:00:58	86	08/22/01	15:54:59	131
08/10/01	14:57:45	42	08/15/01	4:04:10	87	08/22/01	15:55:32	132
08/10/01	18:01:29	43	08/15/01	17:08:20	88	08/22/01	15:55:57	133
08/10/01	18:09:40	44	08/15/01	17:21:25	89	08/22/01	15:56:44	134

Appendix 3c. (continued).

		Tip No.			Tip No.			Tip No.
Date	Time	(0.01 in)	Date	Time	(0.01 in)	Date	Time	(0.01 in)
08/22/01	16:09:13	135	09/08/01	1:58:32	180	09/08/01	12:08:55	225
08/22/01	16:11:48	136	09/08/01	2:01:32	181	09/08/01	12:10:53	226
08/22/01	16:14:08	137	09/08/01	2:05:34	182	09/08/01	12:12:14	227
08/30/01	13:38:52	138	09/08/01	2:09:10	183	09/08/01	12:14:24	228
08/30/01	13:41:43	139	09/08/01	2:13:48	184	09/08/01	12:17:04	229
08/30/01	13:47:10	140	09/08/01	2:19:38	185	09/08/01	12:19:55	230
08/30/01	13:53:46	141	09/08/01	3:00:23	186	09/09/01	2:30:12	231
08/30/01	13:59:38	142	09/08/01	5:09:57	187	09/13/01	20:33:49	232
08/30/01	14:01:50	143	09/08/01	5:33:39	188	09/13/01	20:52:41	233
08/30/01	14:05:13	144	09/08/01	5:48:52	189	09/13/01	21:23:52	234
08/30/01	14:09:08	145	09/08/01	5:54:08	190	09/15/01	0:42:43	235
08/30/01	14:11:51	146	09/08/01	5:57:20	191	09/15/01	0:53:33	236
08/30/01	14:23:14	147	09/08/01	6:01:19	192	09/17/01	4:08:30	237
08/30/01	15:58:27	148	09/08/01	6:07:31	193	09/17/01	4:20:49	238
08/30/01	16:03:13	149	09/08/01	8:27:48	194	09/17/01	4:25:29	239
08/31/01	16:32:19	150	09/08/01	11:16:51	195	09/17/01	4:31:30	240
09/01/01	13:17:08	151	09/08/01	11:19:02	196	09/17/01	7:26:00	241
09/01/01	13:47:05	152	09/08/01	11:20:41	197	09/17/01	7:30:38	242
09/01/01	17:23:41	153	09/08/01	11:28:54	198	09/17/01	11:57:47	243
09/06/01	16:13:37	154	09/08/01	11:30:26	199	09/17/01	11:58:35	244
09/07/01	6:09:37	155	09/08/01	11:31:59	200	09/17/01	12:03:42	245
09/07/01	6:15:22	156	09/08/01	11:33:23	201	09/17/01	12:11:00	246
09/07/01	6:18:15	157	09/08/01	11:34:31	202	09/17/01	12:13:22	247
09/07/01	6:19:13	158	09/08/01	11:35:25	203	10/25/01	14:13:19	248
09/07/01	6:19:54	159	09/08/01	11:36:18	204	10/25/01	14:13:53	248
09/07/01	6:20:31	160	09/08/01	11:36:49	205	10/25/01	14:49.0	0
09/07/01	6:21:04	161	09/08/01	11:37:33	206	11/07/01	01:53.0	1
09/07/01	6:21:54	162	09/08/01	11:38:07	207	11/07/01	26:16.5	2
09/07/01	6:22:34	163	09/08/01	11:38:56	208	11/07/01	00:08.5	3
09/07/01	6:23:22	164	09/08/01	11:39:43	209	11/07/01	09:37.5	4
09/07/01	6:23:55	165	09/08/01	11:40:42	210	11/07/01	14:21.0	5
09/07/01	6:24:47	166	09/08/01	11:41:25	211	11/07/01	24:17.5	6
09/07/01	6:25:36	167	09/08/01	11:42:31	212	11/07/01	43:55.0	7
09/07/01	6:26:44	168	09/08/01	11:43:41	213	11/08/01	01:01.0	8
09/07/01	6:27:32	169	09/08/01	11:45:25	214	11/08/01	35:09.5	9
09/07/01	6:29:01	170	09/08/01	11:46:38	215	11/08/01	36:40.0	10
09/07/01	6:31:37	171	09/08/01	11:48:09	216	11/08/01	38:09.0	11
09/07/01	6:36:29	172	09/08/01	11:49:24	217	11/08/01	40:16.5	12
09/07/01	6:43:34	173	09/08/01	11:51:14	218	11/08/01	42:13.0	13
09/07/01	7:06:08	174	09/08/01	11:52:43	219	11/08/01	45:32.5	14
09/07/01	7:13:32	175	09/08/01	11:54:31	220	11/08/01	48:36.0	15
09/07/01	8:22:03	176	09/08/01	11:58:00	221	11/08/01	52:41.0	16
09/08/01	0:43:01	177	09/08/01	12:00:43	222	11/09/01	03:20.0	17
09/08/01	1:45:25	178	09/08/01	12:02:51	223	11/18/01	28:23.0	18
09/08/01	1:53:52	179	09/08/01	12:06:12	224	11/18/01	41:06.0	19

Appendix 3c. (continued).

Date	Time	Tip No. (0.01 in)	Date	Time	Tip No. (0.01 in)	Date	Time	Tip No. (0.01 in)
11/19/01	18:10.0	20	12/16/01	29:35.5	65	01/25/02	59:59.0	109
11/19/01	20:18.0	21	12/16/01	31:46.0	66	02/27/02	13:19:53	0
11/19/01	22:38.5	22	12/16/01	33:19.5	67	02/27/02	13:20:06	1
11/19/01	25:01.5	23	12/16/01	35:35.5	68	03/03/02	12:02:24	2
11/19/01	30:16.0	24	12/16/01	37:43.5	69	03/03/02	12:45:33	3
11/19/01	33:44.5	25	12/16/01	41:10.5	70	03/03/02	12:55:22	4
11/19/01	43:45.0	26	12/16/01	45:17.5	71	03/03/02	13:07:29	5
11/22/01	48:05.5	27	12/16/01	49:19.5	72	03/03/02	13:20:01	6
11/22/01	18:31.5	28	12/22/01	36:31.5	73	03/03/02	13:28:25	7
11/23/01	49:41.5	29	12/22/01	39:46.0	74	03/03/02	13:37:35	8
11/23/01	24:23.5	30	12/22/01	43:24.0	75	03/04/02	9:16:23	9
11/23/01	32:02.5	31	12/22/01	48:24.0	76	03/04/02	9:43:41	10
11/24/01	00:10.5	32	12/22/01	53:00.0	77	03/04/02	9:49:23	11
11/26/01	08:30.5	33	12/22/01	57:51.5	78	03/04/02	9:53:59	12
11/28/01	26:34.0	34	12/22/01	05:24.0	79	03/04/02	9:57:00	13
11/28/01	35:48.0	35	12/22/01	20:17.5	80	03/04/02	10:07:13	14
11/29/01	21:43.5	36	01/01/02	38:40.5	81	03/09/02	9:18:06	15
11/29/01	28:06.5	37	01/05/02	38:38.0	82	03/09/02	9:22:57	16
11/29/01	44:49.0	38	01/05/02	59:11.5	83	03/09/02	9:27:38	17
11/29/01	51:16.0	39	01/05/02	44:52.0	84	03/09/02	9:36:01	18
11/29/01	02:29.5	40	01/10/02	56:56.5	85	03/14/02	9:17:56	19
11/29/01	11:05.5	41	01/10/02	12:49.0	86	03/14/02	9:20:01	20
11/29/01	19:50.0	42	01/10/02	14:51.5	87	03/14/02	9:21:55	21
11/29/01	30:02.5	43	01/10/02	22:59.0	88	03/14/02	9:24:18	22
11/29/01	40:30.5	44	01/10/02	33:34.0	89	03/14/02	9:26:20	23
11/29/01	51:12.0	45	01/10/02	42:12.0	90	03/14/02	9:28:45	24
11/29/01	20:20.0	46	01/10/02	46:03.0	91	03/14/02	9:30:44	25
11/29/01	26:37.5	47	01/10/02	56:52.0	92	03/14/02	9:33:21	26
11/29/01	44:12.5	48	01/10/02	59:13.0	93	03/14/02	9:35:41	27
11/29/01	06:44.5	49	01/10/02	03:11.0	94	03/14/02	9:38:27	28
11/29/01	25:28.5	50	01/24/02	28:02.0	95	03/14/02	9:41:08	29
11/29/01	31:21.5	51	01/24/02	30:07.5	96	03/14/02	9:44:45	30
11/29/01	42:04.0	52	01/24/02	32:07.5	97	03/14/02	9:47:14	31
11/29/01	54:09.5	53	01/24/02	34:42.0	98	03/14/02	9:50:11	32
11/29/01	26:08.0	54	01/24/02	37:00.0	99	03/15/02	9:29:55	33
11/30/01	25:44.0	55	01/24/02	40:01.5	100	03/15/02	10:35:59	34
11/30/01	40:03.0	56	01/24/02	42:00.0	101	03/15/02	10:41:20	35
11/30/01	53:23.5	57	01/24/02	53:21.0	102	03/15/02	11:33:47	36
11/30/01	02:22.0	58	01/24/02	55:03.0	103	03/15/02	11:34:30	37
11/30/01	11:42.5	59	01/24/02	57:33.5	104	03/15/02	11:41:25	38
12/12/01	14:52.5	60	01/24/02	59:47.0	105	03/16/02	9:17:06	39
12/12/01	29:17.0	61	01/24/02	02:31.5	106	03/16/02	9:21:15	40
12/16/01	25:27.0	62	01/24/02	05:47.5	107	03/16/02	9:52:06	41
12/16/01	26:37.0	63	01/24/02	08:46.5	108	03/16/02	9:58:52	42
12/16/01	28:13.5	64	01/24/02	11:11.0	109	03/16/02	10:09:20	43

Appendix 3c. (continued).

Date	Time	Tip No. (0.01 in)	Date	Time	Tip No. (0.01 in)	Date	Time	Tip No. (0.01 in)
03/16/02	10:16:40	44	05/16/02	13:40:56	1	05/24/02	6:44:32	46
03/19/02	8:37:57	45	05/16/02	13:42:58	2	05/24/02	9:49:38	47
03/19/02	8:40:45	46	05/16/02	13:51:44	3	05/24/02	10:10:30	48
03/19/02	8:43:12	47	05/16/02	14:05:38	4	05/24/02	10:19:57	49
03/19/02	8:45:34	48	05/16/02	16:16:06	5	05/24/02	10:25:02	50
03/19/02	8:48:54	49	05/16/02	16:29:08	6	05/24/02	10:27:46	51
03/19/02	8:52:09	50	05/16/02	16:47:09	7	05/24/02	10:30:57	52
03/19/02	8:57:05	51	05/16/02	16:54:10	8	05/24/02	10:34:00	53
03/19/02	9:01:06	52	05/16/02	17:01:20	9	05/24/02	10:37:27	54
03/19/02	9:05:58	53	05/16/02	17:04:20	10	05/24/02	10:40:44	55
03/19/02	9:16:19	54	05/16/02	17:05:10	11	05/24/02	10:55:04	56
03/25/02	10:07:54	55	05/16/02	17:05:55	12	05/24/02	11:19:43	57
03/25/02	10:08:51	56	05/16/02	17:06:56	13	05/24/02	11:22:37	58
03/25/02	10:10:12	57	05/16/02	17:08:03	14	05/24/02	11:25:29	59
03/25/02	10:11:21	58	05/16/02	17:09:16	15	05/24/02	11:27:41	60
03/25/02	10:12:46	59	05/16/02	17:10:42	16	05/24/02	11:32:35	61
03/25/02	10:13:57	60	05/16/02	18:21:08	17	05/31/02	13:54:23	62
03/25/02	10:15:39	61	05/16/02	20:23:07	18	06/03/02	23:44:39	63
03/25/02	10:17:02	62	05/18/02	20:26:37	19	06/04/02	0:05:42	64
03/25/02	10:18:56	63	05/20/02	15:28:49	20	06/04/02	0:21:43	65
03/25/02	10:21:17	64	05/20/02	15:35:25	21	06/04/02	0:41:11	66
03/25/02	10:23:47	65	05/20/02	15:43:32	22	06/04/02	1:24:17	67
03/25/02	10:25:06	66	05/23/02	19:20:45	23	06/04/02	7:14:27	68
03/25/02	10:28:27	67	05/23/02	19:26:28	24	06/04/02	8:13:45	69
03/25/02	10:30:26	68	05/23/02	19:31:24	25	06/04/02	8:27:36	70
03/25/02	10:33:01	69	05/23/02	19:36:22	26	06/04/02	9:46:37	71
03/25/02	17:54:08	70	05/23/02	19:43:12	27	06/04/02	15:10:55	72
04/11/02	2:07:20	71	05/23/02	19:48:04	28	06/14/02	15:00:50	73
04/11/02	2:08:02	72	05/23/02	19:54:18	29	06/19/02	22:55:36	74
04/11/02	4:55:18	73	05/23/02	20:01:17	30	06/20/02	0:00:11	75
05/11/02	23:30:08	74	05/23/02	20:17:20	31	06/20/02	16:45:40	76
05/11/02	23:56:41	75	05/23/02	20:24:51	32	06/20/02	16:47:47	77
05/12/02	0:35:01	76	05/23/02	20:33:23	33	06/20/02	16:48:17	78
05/12/02	1:23:29	77	05/23/02	20:44:32	34	06/20/02	16:48:51	79
05/12/02	1:38:11	78	05/23/02	21:23:45	35	06/20/02	16:49:27	80
05/12/02	7:34:58	79	05/24/02	0:16:53	36	06/20/02	16:49:52	81
05/12/02	8:08:11	80	05/24/02	0:33:03	37	06/20/02	16:50:18	82
05/12/02	9:14:13	81	05/24/02	1:13:08	38	06/20/02	16:50:53	83
05/12/02	9:23:35	82	05/24/02	1:32:58	39	06/20/02	16:51:20	84
05/12/02	9:32:59	83	05/24/02	2:51:01	40	06/20/02	16:51:48	85
05/12/02	9:45:05	84	05/24/02	6:23:53	41	06/20/02	16:52:03	86
05/12/02	10:02:15	85	05/24/02	6:25:46	42	06/20/02	16:52:52	87
05/12/02	10:16:59	86	05/24/02	6:28:06	43	06/20/02	19:02:10	88
05/14/02	15:52:34	86	05/24/02	6:31:06	44	06/20/02	20:03:12	89
05/14/02	14:57:54	0	05/24/02	6:38:02	45	06/20/02	20:05:16	90

Appendix 3c. (continued).

Tip No.			Tip No.			Tip No.		
Date	Time	(0.01 in)	Date	Time	(0.01 in)	Date	Time	(0.01 in)
06/20/02	20:06:37	91	07/06/02	6:00:47	136	08/03/02	19:13:33	8
06/20/02	20:18:53	92	07/06/02	6:02:31	137	08/03/02	19:14:13	9
06/20/02	20:45:32	93	07/06/02	6:04:34	138	08/03/02	19:14:47	10
06/20/02	21:13:47	94	07/06/02	6:10:43	139	08/03/02	19:15:42	11
06/21/02	17:41:29	95	07/06/02	6:15:07	140	08/03/02	19:16:56	12
06/21/02	17:43:15	96	07/06/02	6:25:27	141	08/03/02	19:27:54	13
06/21/02	17:57:08	97	07/06/02	6:34:51	142	08/03/02	19:37:50	14
06/21/02	20:35:02	98	07/06/02	6:43:32	143	08/03/02	19:46:32	15
06/21/02	20:44:01	99	07/06/02	6:50:43	144	08/03/02	19:54:42	16
06/21/02	21:14:51	100	07/06/02	7:04:11	145	08/03/02	21:07:49	17
06/23/02	19:04:43	101	07/06/02	7:18:12	146	08/03/02	21:48:57	18
06/23/02	19:21:32	102	07/21/02	19:32:07	147	08/03/02	21:51:39	19
07/03/02	14:21:25	103	07/21/02	19:41:23	148	08/03/02	21:54:46	20
07/05/02	19:54:49	104	07/21/02	19:44:14	149	08/03/02	22:00:52	21
07/05/02	20:18:05	105	07/21/02	19:48:04	150	08/03/02	22:12:10	22
07/05/02	21:20:13	106	07/21/02	19:49:40	151	08/03/02	22:19:23	23
07/05/02	21:51:32	107	07/21/02	19:50:20	152	08/03/02	22:23:54	24
07/05/02	23:08:34	108	07/21/02	19:51:10	153	08/03/02	22:28:01	25
07/06/02	2:52:20	109	07/21/02	19:51:41	154	08/03/02	22:41:04	26
07/06/02	3:31:25	110	07/21/02	19:52:11	155	08/04/02	14:39:04	27
07/06/02	5:05:27	111	07/21/02	19:52:43	156	08/05/02	0:27:15	28
07/06/02	5:18:43	112	07/21/02	19:53:53	157	08/05/02	13:53:40	29
07/06/02	5:27:46	113	07/21/02	19:54:43	158	08/05/02	13:54:49	30
07/06/02	5:31:08	114	07/21/02	19:55:25	159	08/05/02	13:55:49	31
07/06/02	5:33:23	115	07/21/02	19:55:49	160	08/05/02	18:11:01	32
07/06/02	5:34:55	116	07/21/02	19:56:19	161	08/06/02	6:17:12	33
07/06/02	5:36:36	117	07/21/02	19:56:51	162	08/06/02	16:39:41	34
07/06/02	5:37:37	118	07/21/02	19:57:36	163	08/06/02	16:41:56	35
07/06/02	5:38:48	119	07/21/02	19:58:30	164	08/06/02	17:01:38	36
07/06/02	5:39:55	120	07/21/02	20:00:04	165	08/06/02	17:03:31	37
07/06/02	5:41:27	121	07/21/02	20:09:57	166	08/06/02	17:05:25	38
07/06/02	5:43:15	122	07/21/02	23:59:32	167	08/06/02	17:07:23	39
07/06/02	5:44:56	123	07/22/02	14:14:57	168	08/06/02	17:10:41	40
07/06/02	5:46:34	124	07/29/02	18:05:33	169	08/06/02	17:13:39	41
07/06/02	5:48:36	125	07/29/02	18:24:31	170	08/06/02	17:35:00	42
07/06/02	5:49:39	126	07/29/02	19:21:27	171	08/07/02	16:32:12	43
07/06/02	5:50:54	127	07/29/02	19:21:33	171	08/07/02	16:36:25	44
07/06/02	5:51:45	128	07/29/02	20:06:36	0	08/07/02	16:38:30	45
07/06/02	5:52:47	129	08/03/02	14:37:57	1	08/07/02	16:42:25	46
07/06/02	5:53:41	130	08/03/02	14:54:45	2	08/07/02	19:05:14	47
07/06/02	5:54:48	131	08/03/02	19:07:16	3	08/07/02	19:21:26	48
07/06/02	5:55:44	132	08/03/02	19:10:19	4	08/19/02	15:52:32	49
07/06/02	5:57:06	133	08/03/02	19:11:39	5	08/19/02	16:45:50	50
07/06/02	5:58:03	134	08/03/02	19:12:13	6	08/21/02	16:08:35	51
07/06/02	5:59:36	135	08/03/02	19:12:53	7	08/21/02	16:09:49	52

Appendix 3c. (continued).

Tip No.			Tip No.			Tip No.		
Date	Time	(0.01 in)	Date	Time	(0.01 in)	Date	Time	(0.01 in)
08/21/02	16:11:19	53	09/10/02	0:16:30	24	09/18/02	14:39:18	69
08/21/02	16:12:18	54	09/10/02	0:26:48	25	09/18/02	17:57:38	70
08/21/02	16:13:09	55	09/10/02	0:34:49	26	09/18/02	18:11:10	71
08/21/02	16:13:55	56	09/10/02	0:48:22	27	09/18/02	18:19:54	72
08/21/02	16:14:30	57	09/10/02	1:05:53	28	09/18/02	18:36:34	73
08/21/02	16:15:12	58	09/10/02	1:21:02	29	09/18/02	18:51:22	74
08/21/02	16:15:48	59	09/10/02	2:25:02	30	09/18/02	18:56:25	75
08/21/02	16:16:37	60	09/10/02	3:08:15	31	09/18/02	19:01:58	76
08/21/02	16:18:13	61	09/10/02	3:31:50	32	09/18/02	19:09:54	77
08/21/02	16:19:24	62	09/10/02	3:56:46	33	09/18/02	19:14:19	78
08/21/02	16:20:42	63	09/10/02	4:17:01	34	09/18/02	19:20:11	79
08/21/02	16:22:29	64	09/10/02	4:31:48	35	09/18/02	19:25:57	80
08/21/02	16:29:49	65	09/10/02	4:45:53	36	09/18/02	19:32:31	81
08/21/02	16:32:44	66	09/10/02	5:33:06	37	09/18/02	19:38:18	82
08/21/02	16:35:12	67	09/10/02	6:13:27	38	09/18/02	19:47:49	83
08/21/02	17:18:30	68	09/10/02	6:46:00	39	09/18/02	19:54:58	84
08/27/02	20:58:05	69	09/10/02	7:03:07	40	09/18/02	20:07:12	85
08/28/02	12:23:01	70	09/10/02	7:22:31	41	09/18/02	20:21:57	86
08/28/02	15:02:22	71	09/10/02	7:43:10	42	09/18/02	21:12:12	87
08/31/02	8:10:12	72	09/10/02	7:53:31	43	09/18/02	22:03:26	88
08/31/02	8:10:21	72	09/12/02	16:22:36	44	09/19/02	0:56:55	89
08/31/02	8:25:27	0	09/12/02	16:23:47	45	09/19/02	1:12:50	90
08/31/02	8:25:29	1	09/12/02	16:24:34	46	09/20/02	13:23:12	90
09/08/02	23:33:10	2	09/12/02	16:25:15	47	09/20/02	13:07:12	0
09/08/02	23:37:22	3	09/12/02	16:25:56	48	09/26/02	4:13:48	1
09/08/02	23:42:33	4	09/12/02	16:28:05	49	09/26/02	4:18:02	2
09/09/02	2:13:37	5	09/12/02	16:30:19	50	09/26/02	4:26:40	3
09/09/02	19:03:52	6	09/12/02	16:30:49	51	09/26/02	4:35:39	4
09/09/02	19:11:56	7	09/12/02	16:31:04	52	09/26/02	10:44:31	5
09/09/02	19:22:02	8	09/12/02	16:31:25	53	09/26/02	10:47:46	6
09/09/02	20:50:29	9	09/12/02	16:31:39	54	09/26/02	11:03:39	7
09/09/02	20:56:45	10	09/12/02	16:32:03	55	09/26/02	11:19:41	8
09/09/02	21:01:46	11	09/12/02	16:32:52	56	09/27/02	14:28:31	9
09/09/02	21:06:35	12	09/12/02	16:33:23	57	09/27/02	14:30:44	10
09/09/02	21:12:51	13	09/12/02	16:34:00	58	10/01/02	18:55:56	11
09/09/02	21:19:13	14	09/12/02	16:34:56	59	10/01/02	19:06:24	12
09/09/02	21:26:03	15	09/12/02	16:36:00	60	10/01/02	19:19:59	13
09/09/02	21:34:36	16	09/12/02	16:37:38	61	10/01/02	19:37:34	14
09/09/02	22:16:37	17	09/12/02	16:39:01	62	10/01/02	19:43:29	15
09/09/02	23:22:08	18	09/12/02	16:41:38	63	10/01/02	19:48:58	16
09/09/02	23:41:30	19	09/12/02	16:46:54	64	10/01/02	19:57:53	17
09/09/02	23:51:05	20	09/12/02	17:50:44	65	10/01/02	20:00:48	18
09/09/02	23:58:53	21	09/12/02	17:53:22	66	10/01/02	20:04:18	19
09/10/02	0:04:55	22	09/12/02	17:55:15	67	10/01/02	20:06:42	20
09/10/02	0:12:23	23	09/12/02	17:58:45	68	10/01/02	20:10:15	21

Appendix 3c. (continued).

Date	Time	Tip No. (0.01 in)	Date	Time	Tip No. (0.01 in)	Date	Time	Tip No. (0.01 in)
10/01/02	20:16:12	22	10/26/02	20:51:11	66	11/03/02	9:04:14	110
10/01/02	20:28:04	23	10/26/02	20:58:24	67	11/03/02	9:06:48	111
10/01/02	20:31:16	24	10/26/02	21:04:43	68	11/03/02	9:09:39	112
10/01/02	20:35:18	25	10/26/02	21:12:55	69	11/03/02	9:22:52	113
10/01/02	20:37:38	26	10/26/02	21:16:48	70	11/03/02	9:25:38	114
10/01/02	20:39:35	27	10/26/02	21:22:44	71	11/03/02	9:31:57	115
10/01/02	20:41:35	28	10/26/02	21:28:41	72	11/09/02	1:59:13	116
10/01/02	20:44:46	29	10/26/02	21:35:40	73	11/12/02	8:56:22	117
10/01/02	20:47:35	30	10/26/02	21:38:14	74	11/13/02	12:05:55	117
10/01/02	20:53:54	31	10/26/02	21:41:11	75	11/13/02	1:19:25	0
10/01/02	21:00:49	32	10/26/02	21:43:12	76	11/15/02	10:05:37	1
10/01/02	21:13:29	33	10/26/02	21:45:36	77	11/15/02	10:40:53	2
10/01/02	21:20:33	34	10/26/02	21:47:49	78	11/16/02	10:18:18	3
10/01/02	21:31:22	35	10/26/02	21:50:11	79	11/25/02	9:51:21	4
10/01/02	21:37:41	36	10/26/02	21:51:54	80	11/25/02	9:56:04	5
10/01/02	21:42:05	37	10/26/02	21:54:44	81	11/25/02	9:57:58	6
10/01/02	21:45:11	38	10/26/02	21:56:56	82	12/18/02	12:36:28	7
10/01/02	21:50:04	39	10/26/02	21:59:47	83	12/19/02	2:29:47	8
10/01/02	21:55:12	40	10/26/02	22:02:15	84	12/19/02	2:37:01	9
10/01/02	22:02:35	41	10/26/02	22:04:48	85	12/19/02	2:57:38	10
10/01/02	22:11:30	42	10/26/02	22:07:03	86	12/20/02	12:29:38	11
10/01/02	22:17:41	43	10/26/02	22:10:20	87	12/20/02	12:47:39	12
10/01/02	22:25:44	44	10/26/02	22:13:16	88	12/20/02	1:59:59	13
10/01/02	23:04:53	45	10/26/02	22:17:08	89	12/20/02	2:03:55	14
10/01/02	23:14:06	46	10/26/02	22:20:31	90	12/20/02	2:06:36	15
10/01/02	23:19:34	47	10/26/02	22:25:13	91	12/20/02	2:09:44	16
10/01/02	23:27:57	48	10/26/02	22:31:19	92	12/20/02	2:13:56	17
10/01/02	23:40:06	49	10/26/02	22:51:14	93	12/20/02	2:17:56	18
10/01/02	23:56:18	50	10/26/02	23:10:26	94	12/20/02	2:22:13	19
10/02/02	0:09:08	51	10/27/02	4:33:41	95	12/20/02	2:25:27	20
10/02/02	0:15:14	52	10/28/02	23:40:09	96	12/20/02	2:29:50	21
10/02/02	0:24:15	53	10/29/02	10:28:04	97	12/20/02	2:34:51	22
10/03/02	2:24:55	54	10/29/02	10:56:34	98	12/20/02	2:40:14	23
10/03/02	2:33:12	55	10/29/02	11:08:00	99	12/20/02	2:47:14	24
10/03/02	2:46:34	56	10/29/02	11:17:20	100	12/20/02	2:52:43	25
10/24/02	9:43:17	57	10/30/02	8:30:28	101	12/20/02	2:59:35	26
10/24/02	9:46:00	58	10/30/02	9:02:22	102	12/20/02	3:07:39	27
10/24/02	9:50:07	59	10/30/02	9:10:34	103	12/20/02	3:19:36	28
10/24/02	9:53:43	60	10/30/02	9:18:17	104	12/23/02	1:11:36	29
10/24/02	10:01:04	61	10/30/02	9:38:05	105			
10/24/02	10:06:31	62	10/31/02	8:10:07	106			
10/24/02	10:14:32	63	10/31/02	8:55:21	107			
10/26/02	20:16:44	64	10/31/02	9:08:57	108			
10/26/02	20:36:32	65	11/01/02	8:14:44	109			

Appendix 3d. Precipitation data for Spring Creek rain gauge.

Date	Time	Tip No. (0.01 in)	Date	Time	Tip No. (0.01 in)	Date	Time	Tip No. (0.01 in)
08/06/01	17:56:58	0	08/10/01	23:11:06	45	08/13/01	14:55:07	90
08/07/01	14:06:15	1	08/13/01	14:45:22	46	08/13/01	14:55:27	91
08/07/01	14:07:15	2	08/13/01	14:46:00	47	08/13/01	14:55:45	92
08/07/01	14:08:23	3	08/13/01	14:46:39	48	08/13/01	14:56:12	93
08/07/01	14:09:48	4	08/13/01	14:47:01	49	08/13/01	14:56:24	94
08/07/01	14:10:53	5	08/13/01	14:47:22	50	08/13/01	14:56:35	95
08/07/01	14:12:07	6	08/13/01	14:47:34	51	08/13/01	14:56:44	96
08/07/01	14:13:33	7	08/13/01	14:47:42	52	08/13/01	14:56:49	97
08/07/01	14:14:55	8	08/13/01	14:47:49	53	08/13/01	14:56:54	98
08/07/01	14:22:58	9	08/13/01	14:47:56	54	08/13/01	14:57:00	99
08/07/01	14:23:53	10	08/13/01	14:48:08	55	08/13/01	14:57:06	100
08/07/01	14:24:29	11	08/13/01	14:48:26	56	08/13/01	14:57:15	101
08/07/01	14:25:27	12	08/13/01	14:48:42	57	08/13/01	14:57:25	102
08/07/01	14:26:21	13	08/13/01	14:48:55	58	08/13/01	14:57:37	103
08/07/01	14:26:47	14	08/13/01	14:49:09	59	08/13/01	14:57:55	104
08/07/01	14:27:24	15	08/13/01	14:49:22	60	08/13/01	14:58:07	105
08/07/01	14:28:27	16	08/13/01	14:49:35	61	08/13/01	14:58:25	106
08/07/01	14:31:18	17	08/13/01	14:49:49	62	08/13/01	14:58:43	107
08/07/01	14:35:31	18	08/13/01	14:50:01	63	08/13/01	14:59:02	108
08/07/01	14:40:20	19	08/13/01	14:50:13	64	08/13/01	14:59:17	109
08/07/01	14:49:43	20	08/13/01	14:50:23	65	08/13/01	14:59:40	110
08/08/01	17:24:13	21	08/13/01	14:50:34	66	08/13/01	15:00:18	111
08/08/01	17:29:18	22	08/13/01	14:50:44	67	08/13/01	15:01:04	112
08/08/01	17:35:27	23	08/13/01	14:50:58	68	08/13/01	15:01:46	113
08/08/01	17:37:21	24	08/13/01	14:51:08	69	08/13/01	15:03:24	114
08/08/01	17:40:23	25	08/13/01	14:51:22	70	08/13/01	15:10:46	115
08/08/01	17:41:36	26	08/13/01	14:51:34	71	08/13/01	15:12:05	116
08/08/01	17:42:42	27	08/13/01	14:51:47	72	08/13/01	15:12:49	117
08/08/01	17:43:23	28	08/13/01	14:52:02	73	08/13/01	15:13:21	118
08/08/01	17:43:49	29	08/13/01	14:52:18	74	08/13/01	15:13:33	119
08/08/01	17:44:22	30	08/13/01	14:52:31	75	08/13/01	15:13:50	120
08/08/01	17:45:19	31	08/13/01	14:52:44	76	08/13/01	15:14:11	121
08/08/01	18:23:10	32	08/13/01	14:52:57	77	08/13/01	15:14:24	122
08/08/01	18:57:35	33	08/13/01	14:53:10	78	08/13/01	15:14:34	123
08/08/01	23:02:18	34	08/13/01	14:53:21	79	08/13/01	15:14:45	124
08/08/01	23:05:15	35	08/13/01	14:53:35	80	08/13/01	15:14:53	125
08/09/01	11:02:10	36	08/13/01	14:53:45	81	08/13/01	15:15:05	126
08/10/01	17:57:41	37	08/13/01	14:53:54	82	08/13/01	15:15:10	127
08/10/01	18:05:19	38	08/13/01	14:54:02	83	08/13/01	15:15:17	128
08/10/01	18:10:17	39	08/13/01	14:54:11	84	08/13/01	15:15:24	129
08/10/01	18:14:52	40	08/13/01	14:54:20	85	08/13/01	15:15:31	130
08/10/01	18:20:47	41	08/13/01	14:54:31	86	08/13/01	15:15:43	131
08/10/01	18:27:23	42	08/13/01	14:54:39	87	08/13/01	15:15:51	132
08/10/01	18:32:25	43	08/13/01	14:54:47	88	08/13/01	15:15:56	133
08/10/01	18:40:10	44	08/13/01	14:54:56	89	08/13/01	15:16:02	134

Appendix 3d. (continued).

Tip No.			Tip No.			Tip No.		
Date	Time	(0.01 in)	Date	Time	(0.01 in)	Date	Time	(0.01 in)
08/13/01	15:16:09	135	08/14/01	15:15:59	180	08/21/01	17:16:10	225
08/13/01	15:16:18	136	08/14/01	15:16:41	181	08/21/01	17:16:26	226
08/13/01	15:16:29	137	08/14/01	15:17:44	182	08/21/01	17:16:39	227
08/13/01	15:16:36	138	08/14/01	15:18:55	183	08/21/01	17:16:58	228
08/13/01	15:16:46	139	08/14/01	15:20:40	184	08/21/01	17:17:14	229
08/13/01	15:16:59	140	08/14/01	15:23:33	185	08/21/01	17:17:33	230
08/13/01	15:17:09	141	08/14/01	15:26:35	186	08/21/01	17:17:46	231
08/13/01	15:17:22	142	08/14/01	15:29:04	187	08/21/01	17:18:01	232
08/13/01	15:17:35	143	08/14/01	15:30:25	188	08/21/01	17:18:15	233
08/13/01	15:17:52	144	08/14/01	15:32:24	189	08/21/01	17:18:33	234
08/13/01	15:18:06	145	08/14/01	15:34:54	190	08/21/01	17:18:48	235
08/13/01	15:18:23	146	08/14/01	15:37:16	191	08/21/01	17:19:07	236
08/13/01	15:18:38	147	08/14/01	15:40:01	192	08/21/01	17:19:22	237
08/13/01	15:18:57	148	08/14/01	15:42:28	193	08/21/01	17:19:39	238
08/13/01	15:19:16	149	08/14/01	18:29:33	194	08/21/01	17:19:55	239
08/13/01	15:19:37	150	08/14/01	18:33:39	195	08/21/01	17:20:13	240
08/13/01	15:19:58	151	08/14/01	18:37:40	196	08/21/01	17:20:32	241
08/13/01	15:20:28	152	08/14/01	22:07:09	197	08/21/01	17:20:53	242
08/13/01	15:20:59	153	08/14/01	22:16:19	198	08/21/01	17:21:05	243
08/13/01	16:01:18	154	08/15/01	1:52:19	199	08/21/01	17:21:20	244
08/14/01	14:51:21	155	08/15/01	1:57:16	200	08/21/01	17:21:32	245
08/14/01	14:55:03	156	08/15/01	2:00:06	201	08/21/01	17:21:52	246
08/14/01	14:59:00	157	08/15/01	2:04:10	202	08/21/01	17:22:07	247
08/14/01	15:00:26	158	08/15/01	2:10:16	203	08/21/01	17:22:33	248
08/14/01	15:01:25	159	08/15/01	2:16:24	204	08/21/01	17:22:59	249
08/14/01	15:02:37	160	08/15/01	2:23:20	205	08/21/01	17:23:41	250
08/14/01	15:03:28	161	08/15/01	2:28:07	206	08/21/01	17:24:09	251
08/14/01	15:03:53	162	08/15/01	2:33:02	207	08/21/01	17:27:07	252
08/14/01	15:04:11	163	08/15/01	2:37:57	208	08/21/01	17:50:46	253
08/14/01	15:04:35	164	08/15/01	2:43:55	209	08/21/01	18:10:33	254
08/14/01	15:04:56	165	08/15/01	5:23:52	210	08/21/01	18:12:38	255
08/14/01	15:05:19	166	08/15/01	18:24:00	211	08/21/01	18:16:20	256
08/14/01	15:05:42	167	08/16/01	15:18:10	212	08/21/01	18:20:35	257
08/14/01	15:06:06	168	08/16/01	17:09:36	213	08/21/01	21:13:44	258
08/14/01	15:06:44	169	08/21/01	17:06:12	214	08/22/01	13:27:09	259
08/14/01	15:07:55	170	08/21/01	17:09:38	215	08/22/01	13:31:02	260
08/14/01	15:09:09	171	08/21/01	17:11:52	216	08/22/01	13:41:18	261
08/14/01	15:10:39	172	08/21/01	17:12:50	217	08/22/01	13:45:26	262
08/14/01	15:11:41	173	08/21/01	17:13:36	218	08/22/01	13:52:27	263
08/14/01	15:12:41	174	08/21/01	17:14:09	219	08/22/01	15:39:25	264
08/14/01	15:13:18	175	08/21/01	17:14:39	220	08/22/01	16:20:08	265
08/14/01	15:13:54	176	08/21/01	17:15:02	221	08/22/01	16:34:59	266
08/14/01	15:14:29	177	08/21/01	17:15:25	222	08/22/01	16:57:27	267
08/14/01	15:15:03	178	08/21/01	17:15:39	223	08/22/01	17:05:53	268
08/14/01	15:15:32	179	08/21/01	17:15:59	224	08/30/01	13:51:45	269

Appendix 3d. (continued).

		Tip No.			Tip No.			Tip No.
Date	Time	(0.01 in)	Date	Time	(0.01 in)	Date	Time	(0.01 in)
08/30/01	13:53:00	270	09/05/01	23:21:32	315	09/08/01	13:05:57	360
08/30/01	13:53:27	271	09/05/01	23:22:11	316	09/08/01	13:06:58	361
08/30/01	13:53:53	272	09/05/01	23:22:46	317	09/08/01	13:08:21	362
08/30/01	13:54:10	273	09/05/01	23:36:39	318	09/08/01	13:09:30	363
08/30/01	13:54:32	274	09/07/01	6:25:38	319	09/08/01	13:11:01	364
08/30/01	13:54:56	275	09/07/01	6:30:27	320	09/08/01	13:12:12	365
08/30/01	13:55:28	276	09/07/01	6:34:12	321	09/08/01	13:13:19	366
08/30/01	13:55:40	277	09/07/01	6:39:27	322	09/08/01	13:14:06	367
08/30/01	13:55:58	278	09/07/01	6:47:14	323	09/08/01	13:15:07	368
08/30/01	13:56:10	279	09/07/01	8:38:57	324	09/08/01	13:15:48	369
08/30/01	13:56:33	280	09/08/01	0:18:29	325	09/08/01	13:16:35	370
08/30/01	13:56:58	281	09/08/01	0:22:22	326	09/08/01	13:17:08	371
08/30/01	13:57:32	282	09/08/01	0:31:58	327	09/08/01	13:17:55	372
08/30/01	13:57:58	283	09/08/01	0:47:53	328	09/08/01	13:18:40	373
08/30/01	13:58:26	284	09/08/01	1:00:21	329	09/08/01	13:19:52	374
08/30/01	13:58:44	285	09/08/01	1:19:29	330	09/08/01	13:20:44	375
08/30/01	13:59:13	286	09/08/01	1:29:20	331	09/08/01	13:21:48	376
08/30/01	13:59:32	287	09/08/01	1:37:35	332	09/08/01	13:22:47	377
08/30/01	13:59:57	288	09/08/01	1:40:28	333	09/08/01	13:24:18	378
08/30/01	14:00:18	289	09/08/01	1:43:55	334	09/08/01	13:25:45	379
08/30/01	14:00:42	290	09/08/01	1:46:34	335	09/08/01	13:28:15	380
08/30/01	14:01:01	291	09/08/01	1:54:53	336	09/08/01	13:29:21	381
08/30/01	14:01:46	292	09/08/01	2:55:51	337	09/08/01	13:31:02	382
08/30/01	14:02:35	293	09/08/01	3:34:28	338	09/08/01	13:33:04	383
08/30/01	14:04:41	294	09/08/01	3:59:24	339	09/08/01	13:34:34	384
08/30/01	14:06:22	295	09/08/01	4:41:15	340	09/08/01	13:35:31	385
08/30/01	14:08:23	296	09/08/01	12:46:29	341	09/08/01	17:06:59	386
08/30/01	14:11:05	297	09/08/01	12:48:10	342	09/08/01	18:53:56	387
08/30/01	14:15:31	298	09/08/01	12:49:25	343	09/13/01	17:58:25	388
08/30/01	14:19:23	299	09/08/01	12:50:56	344	09/13/01	19:06:58	389
08/30/01	14:27:58	300	09/08/01	12:52:05	345	09/13/01	20:22:10	390
09/01/01	13:27:28	301	09/08/01	12:53:21	346	09/13/01	20:27:31	391
09/01/01	16:53:50	302	09/08/01	12:54:26	347	09/13/01	21:05:03	392
09/01/01	17:02:22	303	09/08/01	12:55:39	348	09/13/01	21:17:02	393
09/01/01	17:04:49	304	09/08/01	12:56:38	349	09/13/01	21:22:18	394
09/01/01	17:05:17	305	09/08/01	12:57:36	350	09/13/01	21:26:45	395
09/01/01	17:06:24	306	09/08/01	12:58:16	351	09/14/01	0:42:54	396
09/01/01	17:11:30	307	09/08/01	12:59:08	352	09/16/01	14:25:38	397
09/01/01	17:35:02	308	09/08/01	12:59:46	353	09/16/01	16:44:33	398
09/02/01	12:29:59	309	09/08/01	13:00:32	354	09/16/01	16:47:12	399
09/05/01	13:50:03	310	09/08/01	13:01:08	355	09/16/01	16:50:16	400
09/05/01	13:57:54	311	09/08/01	13:02:07	356	09/17/01	4:44:27	401
09/05/01	23:17:56	312	09/08/01	13:02:49	357	09/17/01	7:35:48	402
09/05/01	23:20:14	313	09/08/01	13:03:50	358	09/17/01	7:47:43	403
09/05/01	23:20:57	314	09/08/01	13:04:41	359	09/17/01	11:48:46	404

Appendix 3d. (continued).

Tip No.			Tip No.			Tip No.		
Date	Time	(0.01 in)	Date	Time	(0.01 in)	Date	Time	(0.01 in)
09/17/01	11:49:11	405	11/08/01	20:11.5	24	11/29/01	56:40.0	69
09/17/01	11:49:36	406	11/08/01	22:06.0	25	11/29/01	01:39.0	70
09/17/01	11:49:51	407	11/08/01	24:46.0	26	11/29/01	04:16.5	71
09/17/01	11:50:07	408	11/08/01	26:52.5	27	11/29/01	09:48.5	72
09/17/01	11:50:21	409	11/08/01	30:19.0	28	11/29/01	17:06.5	73
09/17/01	11:50:40	410	11/08/01	33:07.0	29	11/29/01	29:05.0	74
09/17/01	11:50:56	411	11/08/01	38:22.0	30	11/29/01	45:52.5	75
09/17/01	11:51:31	412	11/09/01	19:23.5	31	11/29/01	08:26.0	76
09/17/01	11:51:58	413	11/19/01	23:15.0	32	11/30/01	07:20.5	77
09/17/01	11:52:14	414	11/19/01	38:23.5	33	11/30/01	23:06.0	78
09/17/01	11:52:34	415	11/19/01	41:27.0	34	11/30/01	44:35.5	79
09/17/01	11:52:53	416	11/19/01	44:27.5	35	11/30/01	03:39.5	80
09/17/01	11:53:31	417	11/19/01	47:42.5	36	12/01/01	32:58.5	81
09/17/01	11:54:29	418	11/19/01	51:00.5	37	12/01/01	00:06.5	82
09/17/01	11:54:52	419	11/19/01	54:15.5	38	12/01/01	13:18.5	83
09/17/01	11:55:37	420	11/19/01	58:01.5	39	12/01/01	50:05.5	84
09/17/01	11:57:12	421	11/19/01	02:12.5	40	12/12/01	01:56.5	85
09/17/01	12:03:00	422	11/19/01	06:56.5	41	12/12/01	10:40.5	86
09/22/01	12:54:42	423	11/19/01	12:59.0	42	12/12/01	30:32.0	87
10/06/01	9:17:01	424	11/19/01	15:09.0	43	12/13/01	07:12.5	88
10/18/01	16:54:50	424	11/19/01	36:21.0	44	12/16/01	02:22.0	89
10/18/01	54:01.0	0	11/19/01	47:26.5	45	12/16/01	05:29.0	90
11/07/01	41:59.0	1	11/22/01	49:06.5	46	12/16/01	08:29.5	91
11/07/01	48:33.5	2	11/23/01	32:54.5	47	12/16/01	10:25.5	92
11/07/01	21:19.5	3	11/23/01	20:56.5	48	12/16/01	13:12.5	93
11/07/01	27:47.0	4	11/24/01	33:52.0	49	12/16/01	15:12.0	94
11/07/01	39:57.5	5	11/26/01	16:08.5	50	12/16/01	17:31.0	95
11/07/01	49:18.0	6	11/26/01	21:05.5	51	12/16/01	19:54.5	96
11/07/01	55:04.0	7	11/26/01	26:53.0	52	12/16/01	23:01.0	97
11/07/01	00:37.5	8	11/26/01	43:42.5	53	12/16/01	25:28.0	98
11/07/01	04:52.0	9	11/29/01	59:11.0	54	12/16/01	28:44.0	99
11/07/01	12:16.5	10	11/29/01	02:04.5	55	12/16/01	30:54.0	100
11/07/01	20:06.5	11	11/29/01	04:39.5	56	12/16/01	34:02.5	101
11/07/01	33:01.5	12	11/29/01	09:11.5	57	12/16/01	36:54.0	102
11/07/01	02:00.0	13	11/29/01	11:04.5	58	12/16/01	43:00.0	103
11/07/01	13:46.5	14	11/29/01	15:10.0	59	12/16/01	45:58.0	104
11/08/01	58:42.5	15	11/29/01	19:23.5	60	12/16/01	49:36.5	105
11/08/01	04:59.0	16	11/29/01	24:10.0	61	12/16/01	54:19.0	106
11/08/01	06:19.5	17	11/29/01	27:39.5	62	12/16/01	05:39.5	107
11/08/01	07:44.0	18	11/29/01	29:46.0	63	12/16/01	09:52.0	108
11/08/01	09:06.0	19	11/29/01	32:48.0	64	12/16/01	13:40.5	109
11/08/01	10:59.0	20	11/29/01	39:20.0	65	12/16/01	20:23.5	110
11/08/01	12:45.0	21	11/29/01	45:09.5	66	12/17/01	19:01.5	111
11/08/01	15:18.5	22	11/29/01	46:29.0	67	12/17/01	45:36.5	112
11/08/01	17:23.0	23	11/29/01	49:46.5	68	12/22/01	31:43.5	113

Appendix 3d. (continued).

Tip No.			Tip No.			Tip No.		
Date	Time	(0.01 in)	Date	Time	(0.01 in)	Date	Time	(0.01 in)
12/22/01	33:40.0	114	01/24/02	47:53.0	159	03/16/02	11:14:42	25
12/22/01	35:39.0	115	01/24/02	49:55.5	160	03/16/02	11:18:30	26
12/22/01	38:42.5	116	01/24/02	52:04.5	161	03/16/02	11:25:10	27
12/22/01	41:50.5	117	01/24/02	54:18.0	162	03/16/02	11:29:04	28
12/22/01	48:04.5	118	01/24/02	56:48.5	163	03/16/02	11:35:57	29
12/22/01	06:01.5	119	01/24/02	58:37.5	164	03/16/02	11:39:42	30
12/22/01	14:26.0	120	01/24/02	00:46.5	165	03/16/02	11:45:05	31
01/01/02	24:43.5	121	01/24/02	02:46.0	166	03/16/02	11:48:08	32
01/02/02	38:49.5	122	01/24/02	05:19.0	167	03/16/02	11:55:16	33
01/02/02	51:00.5	123	01/24/02	07:31.0	168	03/16/02	11:58:40	34
01/02/02	03:29.0	124	01/24/02	10:29.0	169	03/16/02	12:06:47	35
01/05/02	27:47.0	125	01/24/02	13:01.0	170	03/16/02	12:12:13	36
01/05/02	28:05.5	126	01/24/02	17:06.0	171	03/19/02	8:54:25	37
01/05/02	52:26.5	127	01/24/02	19:56.0	172	03/19/02	8:56:30	38
01/05/02	56:16.0	128	01/24/02	23:54.5	173	03/19/02	9:10:12	39
01/05/02	02:52.0	129	01/24/02	29:32.0	174	03/19/02	9:11:51	40
01/05/02	10:27.0	130	01/24/02	36:50.5	175	03/19/02	9:15:48	41
01/05/02	24:33.0	131	01/24/02	41:44.0	176	03/19/02	9:19:10	42
01/10/02	49:39.5	132	01/24/02	49:32.5	177	03/19/02	9:34:15	43
01/10/02	49:59.5	133	01/25/02	46:42.5	177	03/19/02	9:38:03	44
01/10/02	05:00.5	134	03/05/02	12:50:08	0	03/19/02	9:51:38	45
01/10/02	10:37.0	135	03/09/02	8:45:43	1	03/25/02	9:20:38	46
01/10/02	14:01.0	136	03/09/02	9:23:20	2	03/25/02	10:25:49	47
01/10/02	20:33.5	137	03/09/02	9:28:12	3	03/25/02	10:27:26	48
01/10/02	22:55.0	138	03/09/02	9:58:44	4	03/25/02	10:29:50	49
01/10/02	25:51.0	139	03/09/02	10:08:36	5	03/25/02	10:31:18	50
01/10/02	28:38.0	140	03/14/02	8:44:36	6	03/25/02	10:33:14	51
01/10/02	33:13.0	141	03/14/02	8:46:53	7	03/25/02	10:34:35	52
01/10/02	39:33.5	142	03/14/02	9:40:28	8	03/25/02	10:36:49	53
01/10/02	44:18.5	143	03/14/02	9:42:18	9	03/25/02	10:38:20	54
01/10/02	47:07.5	144	03/14/02	9:45:09	10	03/25/02	10:40:51	55
01/10/02	49:07.0	145	03/14/02	9:48:48	11	03/25/02	10:42:33	56
01/10/02	50:57.5	146	03/14/02	9:53:01	12	03/25/02	10:45:05	57
01/10/02	53:42.5	147	03/14/02	9:57:12	13	03/25/02	10:46:45	58
01/10/02	55:47.5	148	03/14/02	10:05:55	14	03/25/02	10:49:29	59
01/10/02	59:01.0	149	03/14/02	10:09:09	15	03/25/02	10:51:54	60
01/10/02	01:36.5	150	03/14/02	10:13:25	16	03/25/02	10:53:18	61
01/10/02	05:28.5	151	03/14/02	11:28:42	17	03/25/02	10:56:44	62
01/10/02	08:30.5	152	03/14/02	11:33:17	18	03/26/02	7:52:46	63
01/10/02	19:40.5	153	03/14/02	11:36:23	19	04/11/02	2:07:12	64
01/10/02	23:03.5	154	03/15/02	8:53:40	20	04/20/02	8:20:32	65
01/10/02	28:51.0	155	03/15/02	14:56:16	21	04/26/02	11:20:42	66
01/24/02	41:12.5	156	03/16/02	10:36:32	22	04/26/02	14:23:18	67
01/24/02	43:38.5	157	03/16/02	11:06:41	23	04/27/02	0:51:45	68
01/24/02	45:45.0	158	03/16/02	11:11:04	24	05/11/02	19:27:34	69

Appendix 3d. (continued).

Date	Time	Tip No. (0.01 in)	Date	Time	Tip No. (0.01 in)	Date	Time	Tip No. (0.01 in)
05/11/02	20:46:11	70	05/23/02	19:06:02	11	05/24/02	11:58:50	56
05/12/02	0:01:48	71	05/23/02	19:10:48	12	05/24/02	11:59:27	57
05/12/02	0:26:11	72	05/23/02	19:16:09	13	05/24/02	12:00:21	58
05/12/02	0:51:43	73	05/23/02	19:18:48	14	05/24/02	12:00:57	59
05/12/02	1:21:01	74	05/23/02	19:27:19	15	05/24/02	12:02:09	60
05/12/02	4:47:33	75	05/23/02	19:32:46	16	05/24/02	12:02:59	61
05/12/02	8:13:30	76	05/23/02	19:39:02	17	05/24/02	12:04:31	62
05/12/02	8:29:27	77	05/23/02	19:43:21	18	05/24/02	12:05:18	63
05/12/02	8:38:59	78	05/23/02	19:52:41	19	05/24/02	12:10:08	64
05/12/02	8:54:24	79	05/23/02	19:56:30	20	05/24/02	12:11:34	65
05/12/02	9:49:36	80	05/23/02	20:01:18	21	05/24/02	12:15:19	66
05/12/02	10:12:57	81	05/23/02	20:04:44	22	05/24/02	12:27:12	67
05/12/02	10:18:20	82	05/23/02	20:08:55	23	05/24/02	12:31:16	68
05/12/02	10:48:00	83	05/23/02	20:14:09	24	05/24/02	12:33:47	69
05/16/02	14:28:29	84	05/23/02	20:26:09	25	05/24/02	12:36:44	70
05/16/02	14:43:01	85	05/23/02	20:31:52	26	05/24/02	12:39:11	71
05/16/02	14:46:22	86	05/23/02	20:38:03	27	05/24/02	12:41:29	72
05/16/02	14:54:33	87	05/23/02	20:43:17	28	05/24/02	12:43:20	73
05/16/02	16:35:56	88	05/23/02	21:07:45	29	05/24/02	12:45:53	74
05/16/02	16:39:34	89	05/23/02	21:57:01	30	05/24/02	12:47:58	75
05/16/02	16:42:24	90	05/23/02	23:32:20	31	05/24/02	12:50:47	76
05/16/02	16:59:29	91	05/24/02	0:27:33	32	05/24/02	12:53:01	77
05/16/02	17:12:16	92	05/24/02	6:38:50	33	05/24/02	12:56:04	78
05/16/02	17:21:38	93	05/24/02	6:39:42	34	05/24/02	12:58:14	79
05/16/02	17:22:36	94	05/24/02	9:22:19	35	05/24/02	13:01:00	80
05/16/02	17:24:14	95	05/24/02	9:34:33	36	05/24/02	13:02:39	81
05/16/02	17:30:50	96	05/24/02	9:40:18	37	05/24/02	13:05:24	82
05/16/02	17:34:47	97	05/24/02	9:45:53	38	05/24/02	13:07:44	83
05/16/02	17:44:57	98	05/24/02	9:49:19	39	05/24/02	13:10:52	84
05/16/02	17:48:54	99	05/24/02	9:53:52	40	05/24/02	13:12:49	85
05/16/02	17:50:13	100	05/24/02	9:57:45	41	05/24/02	13:15:02	86
05/16/02	17:53:12	101	05/24/02	10:03:58	42	05/24/02	13:16:58	87
05/16/02	17:58:46	102	05/24/02	10:09:18	43	06/03/02	23:11:29	88
05/16/02	18:55:40	102	05/24/02	11:44:19	44	06/03/02	23:22:21	89
05/16/02	17:56:16	0	05/24/02	11:45:18	45	06/03/02	23:40:01	90
05/16/02	20:09:05	1	05/24/02	11:46:38	46	06/03/02	23:57:16	91
05/16/02	20:11:39	2	05/24/02	11:47:29	47	06/04/02	0:08:51	92
05/16/02	20:15:00	3	05/24/02	11:48:59	48	06/04/02	0:15:09	93
05/16/02	20:17:09	4	05/24/02	11:49:54	49	06/04/02	0:24:28	94
05/16/02	20:48:26	5	05/24/02	11:51:08	50	06/04/02	0:28:27	95
05/17/02	6:15:42	6	05/24/02	11:52:15	51	06/04/02	0:34:38	96
05/18/02	20:32:51	7	05/24/02	11:54:06	52	06/04/02	0:39:40	97
05/20/02	15:57:44	8	05/24/02	11:55:27	53	06/04/02	0:55:13	98
05/20/02	16:46:11	9	05/24/02	11:57:00	54	06/04/02	1:46:09	99
05/20/02	17:11:11	10	05/24/02	11:57:52	55	06/04/02	2:12:24	100

Appendix 3d. (continued).

Tip No.			Tip No.			Tip No.		
Date	Time	(0.01 in)	Date	Time	(0.01 in)	Date	Time	(0.01 in)
06/04/02	4:16:46	101	06/21/02	21:18:41	146	07/06/02	3:57:58	191
06/04/02	7:16:23	102	06/21/02	21:26:23	147	07/06/02	4:05:46	192
06/04/02	7:17:14	103	06/27/02	13:45:57	148	07/06/02	4:08:38	193
06/04/02	7:19:26	104	06/27/02	14:24:53	149	07/06/02	4:11:54	194
06/04/02	7:20:43	105	06/27/02	16:42:03	150	07/06/02	4:14:27	195
06/04/02	7:26:30	106	07/03/02	12:13:47	151	07/06/02	4:24:28	196
06/04/02	7:43:04	107	07/03/02	12:15:08	152	07/06/02	4:34:05	197
06/04/02	7:51:25	108	07/03/02	12:15:54	153	07/06/02	4:42:47	198
06/04/02	7:56:30	109	07/03/02	12:17:45	154	07/06/02	4:47:43	199
06/04/02	8:05:43	110	07/03/02	12:20:29	155	07/06/02	4:59:41	200
06/04/02	8:35:54	111	07/05/02	20:56:44	156	07/06/02	5:03:45	201
06/04/02	8:57:43	112	07/05/02	21:48:38	157	07/06/02	5:09:02	202
06/04/02	9:07:49	113	07/05/02	22:19:57	158	07/06/02	5:11:30	203
06/04/02	10:15:28	114	07/05/02	23:10:12	159	07/06/02	5:15:08	204
06/04/02	10:24:50	115	07/05/02	23:10:53	160	07/06/02	5:19:50	205
06/04/02	11:02:25	116	07/05/02	23:11:22	161	07/06/02	5:23:20	206
06/04/02	11:13:51	117	07/05/02	23:12:37	162	07/06/02	5:25:03	207
06/04/02	13:26:01	118	07/05/02	23:13:17	163	07/06/02	5:32:07	208
06/04/02	13:28:53	119	07/05/02	23:20:18	164	07/06/02	5:39:32	209
06/04/02	13:33:03	120	07/06/02	2:06:36	165	07/06/02	5:42:50	210
06/04/02	13:35:17	121	07/06/02	2:17:02	166	07/06/02	5:43:31	211
06/04/02	13:39:22	122	07/06/02	2:18:03	167	07/06/02	5:44:14	212
06/04/02	13:41:29	123	07/06/02	2:19:57	168	07/06/02	5:44:46	213
06/04/02	13:45:20	124	07/06/02	2:22:08	169	07/06/02	5:45:42	214
06/04/02	13:47:08	125	07/06/02	2:24:27	170	07/06/02	5:46:38	215
06/04/02	13:49:35	126	07/06/02	2:25:40	171	07/06/02	5:47:58	216
06/04/02	13:51:49	127	07/06/02	2:28:37	172	07/06/02	5:48:50	217
06/04/02	13:55:11	128	07/06/02	2:30:51	173	07/06/02	5:50:36	218
06/04/02	13:57:39	129	07/06/02	2:34:09	174	07/06/02	5:51:22	219
06/04/02	14:02:11	130	07/06/02	2:39:06	175	07/06/02	5:52:05	220
06/04/02	14:07:18	131	07/06/02	2:49:04	176	07/06/02	5:53:00	221
06/04/02	14:19:46	132	07/06/02	2:59:20	177	07/06/02	5:54:08	222
06/16/02	14:44:38	133	07/06/02	3:04:28	178	07/06/02	5:55:25	223
06/19/02	22:39:46	134	07/06/02	3:07:48	179	07/06/02	5:58:29	224
06/19/02	22:46:24	135	07/06/02	3:11:43	180	07/06/02	6:01:00	225
06/20/02	16:13:22	136	07/06/02	3:14:24	181	07/06/02	6:06:23	226
06/20/02	16:42:26	137	07/06/02	3:19:31	182	07/06/02	6:12:15	227
06/20/02	16:51:26	138	07/06/02	3:23:05	183	07/06/02	6:42:33	228
06/20/02	20:27:43	139	07/06/02	3:28:09	184	07/06/02	6:59:26	229
06/21/02	17:30:16	140	07/06/02	3:31:34	185	07/21/02	23:03:26	230
06/21/02	17:33:52	141	07/06/02	3:36:53	186	07/21/02	23:07:45	231
06/21/02	17:37:41	142	07/06/02	3:39:29	187	07/21/02	23:19:01	232
06/21/02	18:00:38	143	07/06/02	3:42:59	188	07/21/02	23:34:36	233
06/21/02	20:57:24	144	07/06/02	3:45:57	189	07/21/02	23:36:23	234
06/21/02	21:10:40	145	07/06/02	3:52:18	190	07/21/02	23:37:00	235

Appendix 3d. (continued).

Date	Time	Tip No. (0.01 in)	Date	Time	Tip No. (0.01 in)	Date	Time	Tip No. (0.01 in)
07/21/02	23:37:54	236	08/07/02	19:31:45	39	08/28/02	15:18:12	84
07/21/02	23:38:56	237	08/21/02	16:10:25	40	08/28/02	15:18:14	85
07/21/02	23:40:54	238	08/21/02	16:11:55	41	08/28/02	15:18:15	86
07/21/02	23:51:19	239	08/21/02	16:12:38	42	08/28/02	15:18:17	87
07/29/02	12:00:46	240	08/21/02	16:13:38	43	08/28/02	15:18:18	88
07/29/02	12:00:53	240	08/21/02	16:14:23	44	08/28/02	15:18:20	89
Possible animal tampering		0	08/21/02	16:15:15	45	08/28/02	15:18:21	90
08/03/02	20:01:28	1	08/21/02	16:15:48	46	08/28/02	15:18:23	91
08/03/02	20:42:14	2	08/21/02	16:16:44	47	08/28/02	15:18:24	92
08/03/02	20:48:10	3	08/21/02	16:17:51	48	08/28/02	15:18:25	93
08/03/02	20:55:34	4	08/21/02	16:19:23	49	08/28/02	15:18:27	94
08/03/02	22:03:06	5	08/21/02	16:20:18	50	08/28/02	15:18:28	95
08/03/02	22:12:23	6	08/21/02	16:22:34	51	08/28/02	15:50:18	96
08/03/02	22:18:08	7	08/21/02	16:24:29	52	08/31/02	9:47:55	97
08/03/02	22:20:58	8	08/21/02	16:37:26	53	Rain gauge re-launched		97
08/03/02	22:24:09	9	08/21/02	16:43:38	54	08/31/02	10:10:13	0
08/03/02	22:28:44	10	08/21/02	17:13:50	55	08/31/02	10:14:48	1
08/03/02	22:42:11	11	08/22/02	15:30:08	56	08/31/02	10:17:57	2
08/03/02	23:02:52	12	08/22/02	15:42:29	57	08/31/02	10:17:59	3
08/04/02	0:06:22	13	08/22/02	15:47:39	58	08/31/02	10:18:04	4
08/04/02	0:21:26	14	08/22/02	15:51:30	59	08/31/02	10:18:23	5
08/04/02	0:42:44	15	08/22/02	15:53:23	60	08/31/02	10:18:26	6
08/04/02	0:47:38	16	08/22/02	16:04:50	61	09/08/02	23:43:07	7
08/04/02	5:04:55	17	08/23/02	12:35:38	62	09/08/02	23:48:50	8
08/05/02	14:07:21	18	08/26/02	17:27:49	63	09/08/02	23:57:31	9
08/05/02	14:11:43	19	08/26/02	17:27:52	64	09/09/02	1:14:48	10
08/05/02	14:28:22	20	08/26/02	17:28:00	65	09/09/02	13:29:01	11
08/05/02	15:09:02	21	08/26/02	17:28:10	66	09/09/02	14:47:10	12
08/05/02	15:09:57	22	08/26/02	17:28:15	67	09/09/02	14:59:13	13
08/05/02	15:11:56	23	08/28/02	6:08:59	68	09/09/02	17:39:21	14
08/05/02	15:13:03	24	08/28/02	14:48:24	69	09/09/02	20:22:32	15
08/05/02	15:14:58	25	Bear	15:17:48	70	09/09/02	20:29:15	16
08/05/02	15:39:58	26	08/28/02	15:17:52	71	09/09/02	20:35:02	17
08/05/02	19:16:17	27	08/28/02	15:17:54	72	09/09/02	20:39:41	18
08/05/02	19:19:47	28	08/28/02	15:17:56	73	09/09/02	20:43:17	19
08/05/02	19:25:26	29	08/28/02	15:17:57	74	09/09/02	20:50:23	20
08/06/02	5:57:41	30	08/28/02	15:17:58	75	09/09/02	20:55:44	21
08/06/02	16:50:37	31	08/28/02	15:18:00	76	09/09/02	20:59:17	22
08/06/02	16:56:27	32	08/28/02	15:18:01	77	09/09/02	21:02:25	23
08/06/02	17:18:52	33	08/28/02	15:18:03	78	09/09/02	21:06:31	24
08/06/02	17:21:00	34	08/28/02	15:18:04	79	09/09/02	21:10:48	25
08/06/02	17:28:59	35	08/28/02	15:18:06	80	09/09/02	21:13:52	26
08/07/02	14:48:40	36	08/28/02	15:18:07	81	09/09/02	21:18:05	27
08/07/02	17:12:49	37	08/28/02	15:18:09	82	09/09/02	21:24:12	28
08/07/02	19:25:26	38	08/28/02	15:18:11	83	09/09/02	21:28:54	29

Appendix 3d. (continued).

Tip No.			Tip No.			Tip No.		
Date	Time	(0.01 in)	Date	Time	(0.01 in)	Date	Time	(0.01 in)
09/09/02	21:39:10	30	09/12/02	16:55:00	75	09/18/02	19:53:42	120
09/09/02	22:19:17	31	09/12/02	16:55:12	76	09/18/02	19:58:01	121
09/09/02	22:47:31	32	09/12/02	16:55:30	77	09/18/02	20:02:49	122
09/09/02	23:28:35	33	09/12/02	16:55:46	78	09/18/02	20:11:08	123
09/09/02	23:36:45	34	09/12/02	16:56:19	79	09/18/02	20:36:17	124
09/09/02	23:42:31	35	09/12/02	16:56:49	80	09/18/02	21:11:50	125
09/09/02	23:47:38	36	09/12/02	16:57:21	81	09/18/02	21:40:23	126
09/09/02	23:53:54	37	09/12/02	16:57:55	82	09/18/02	22:21:35	127
09/10/02	0:03:29	38	09/12/02	16:58:55	83	09/19/02	0:46:53	128
09/10/02	0:15:53	39	09/12/02	17:04:23	84	09/26/02	2:02:28	129
09/10/02	0:23:13	40	09/13/02	12:45:03	85	09/26/02	4:14:26	130
09/10/02	0:29:58	41	09/13/02	13:02:18	86	09/26/02	4:27:24	131
09/10/02	0:36:16	42	09/13/02	13:10:51	87	09/26/02	4:34:44	132
09/10/02	0:44:07	43	09/13/02	15:07:49	88	09/26/02	10:19:52	133
09/10/02	0:57:57	44	09/18/02	16:37:21	89	09/26/02	10:30:27	134
09/10/02	1:28:15	45	09/18/02	17:26:17	90	09/26/02	10:34:05	135
09/10/02	2:30:47	46	09/18/02	17:32:16	91	09/26/02	10:37:42	136
09/10/02	2:51:57	47	09/18/02	17:40:56	92	09/26/02	10:40:08	137
09/10/02	3:19:00	48	09/18/02	17:47:57	93	09/26/02	10:42:05	138
09/10/02	3:43:44	49	09/18/02	17:51:49	94	09/26/02	10:44:31	139
09/10/02	3:54:17	50	09/18/02	17:55:08	95	09/26/02	10:46:30	140
09/10/02	4:02:40	51	09/18/02	17:59:44	96	09/26/02	10:48:09	141
09/10/02	4:15:21	52	09/18/02	18:02:03	97	09/26/02	10:50:52	142
09/10/02	4:27:29	53	09/18/02	18:05:29	98	09/26/02	10:53:29	143
09/10/02	4:39:20	54	09/18/02	18:08:49	99	09/26/02	10:55:49	144
09/10/02	5:15:19	55	09/18/02	18:11:52	100	09/26/02	10:58:09	145
09/10/02	6:13:56	56	09/18/02	18:14:07	101	09/26/02	11:00:33	146
09/10/02	6:30:00	57	09/18/02	18:16:11	102	09/26/02	11:02:19	147
09/10/02	6:50:09	58	09/18/02	18:18:50	103	09/26/02	11:04:19	148
09/10/02	7:19:14	59	09/18/02	18:22:25	104	09/26/02	11:07:06	149
09/10/02	7:41:25	60	09/18/02	18:27:45	105	09/26/02	11:10:17	150
09/10/02	8:42:06	61	09/18/02	18:32:51	106	09/26/02	11:15:16	151
09/12/02	16:47:03	62	09/18/02	18:38:55	107	09/26/02	11:22:38	152
09/12/02	16:49:16	63	09/18/02	18:43:25	108	10/01/02	18:31:07	153
09/12/02	16:50:12	64	09/18/02	18:48:06	109	10/01/02	18:58:42	154
09/12/02	16:51:12	65	09/18/02	18:52:40	110	10/01/02	19:17:39	155
09/12/02	16:51:33	66	09/18/02	18:58:35	111	10/01/02	19:23:14	156
09/12/02	16:52:00	67	09/18/02	19:04:24	112	10/01/02	19:26:56	157
09/12/02	16:52:26	68	09/18/02	19:11:04	113	10/01/02	19:30:54	158
09/12/02	16:52:59	69	09/18/02	19:18:14	114	10/01/02	19:33:50	159
09/12/02	16:53:26	70	09/18/02	19:26:03	115	10/01/02	19:37:24	160
09/12/02	16:53:52	71	09/18/02	19:32:38	116	10/01/02	19:41:19	161
09/12/02	16:54:11	72	09/18/02	19:38:14	117	10/01/02	19:45:08	162
09/12/02	16:54:27	73	09/18/02	19:44:02	118	10/01/02	19:48:37	163
09/12/02	16:54:42	74	09/18/02	19:48:59	119	10/01/02	19:52:32	164

Appendix 3d. (continued).

Tip No.			Tip No.			Tip No.		
Date	Time	(0.01 in)	Date	Time	(0.01 in)	Date	Time	(0.01 in)
10/01/02	19:55:02	165	10/02/02	5:20:30	210	11/01/02	12:14:55	255
10/01/02	19:58:56	166	10/02/02	5:58:10	211	11/02/02	8:32:54	256
10/01/02	20:02:32	167	10/03/02	3:12:41	212	11/03/02	9:26:32	257
10/01/02	20:06:40	168	10/23/02	10:18:39	213	11/03/02	10:20:27	258
10/01/02	20:10:47	169	10/23/02	11:06:30	214	11/03/02	11:52:10	259
10/01/02	20:14:34	170	10/26/02	20:48:04	215	11/09/02	1:54:27	260
10/01/02	20:19:24	171	10/26/02	21:25:44	216	11/09/02	13:06:52	261
10/01/02	20:26:18	172	10/26/02	21:38:16	217	11/09/02	13:22:15	262
10/01/02	20:28:50	173	10/26/02	21:45:32	218	11/09/02	13:35:01	263
10/01/02	20:30:56	174	10/26/02	21:54:33	219	11/11/02	13:43:21	264
10/01/02	20:34:08	175	10/26/02	22:05:13	220	11/12/02	11:01:44	265
10/01/02	20:51:49	176	10/26/02	22:09:35	221	11/13/02	10:36:02	265
10/01/02	21:04:39	177	10/26/02	22:13:27	222	11/13/02	11:32:27	0
10/01/02	21:07:56	178	10/26/02	22:17:46	223	11/14/02	03:34.0	1
10/01/02	21:10:45	179	10/26/02	22:25:52	224	11/14/02	13:31.0	2
10/01/02	21:14:13	180	10/26/02	22:40:05	225	11/14/02	18:14.0	3
10/01/02	21:17:44	181	10/27/02	0:01:38	226	11/15/02	17:15.0	4
10/01/02	21:20:54	182	10/27/02	7:20:35	227	11/15/02	02:50.0	5
10/01/02	21:23:57	183	10/27/02	7:35:53	228	11/15/02	45:05.0	6
10/01/02	21:27:42	184	10/27/02	7:54:30	229	11/16/02	54:02.0	7
10/01/02	21:32:05	185	10/27/02	8:09:19	230	11/16/02	05:56.0	8
10/01/02	21:37:15	186	10/27/02	8:26:25	231	11/25/02	17:56.0	9
10/01/02	21:42:20	187	10/27/02	8:44:32	232	11/25/02	57:53.0	10
10/01/02	21:47:56	188	10/29/02	10:12:53	233	11/25/02	12:36.0	11
10/01/02	21:53:54	189	10/30/02	12:51:51	234	12/18/02	59:11.0	12
10/01/02	22:00:30	190	10/30/02	13:02:48	235	12/19/02	36:42.0	13
10/01/02	22:06:16	191	10/30/02	13:05:47	236	12/19/02	50:30.0	14
10/01/02	22:10:46	192	10/30/02	13:13:28	237	12/20/02	21:48.0	15
10/01/02	22:14:53	193	10/30/02	13:39:43	238	12/20/02	38:35.0	16
10/01/02	22:18:55	194	10/31/02	9:45:49	239	12/20/02	35:38.0	17
10/01/02	22:22:50	195	10/31/02	9:48:19	240	12/20/02	57:59.0	18
10/01/02	22:27:02	196	10/31/02	10:41:25	241	12/20/02	13:34.0	19
10/01/02	22:33:57	197	10/31/02	11:08:54	242	12/20/02	19:59.0	20
10/01/02	22:43:11	198	10/31/02	11:52:26	243	12/20/02	29:00.0	21
10/01/02	22:51:45	199	10/31/02	11:56:17	244	12/20/02	43:12.0	22
10/01/02	23:09:54	200	10/31/02	12:01:25	245	12/20/02	49:46.0	23
10/01/02	23:24:22	201	10/31/02	12:07:00	246	12/20/02	04:31.0	24
10/01/02	23:40:29	202	10/31/02	12:12:14	247	12/20/02	09:07.0	25
10/02/02	3:13:02	203	10/31/02	12:18:34	248	12/20/02	14:01.0	26
10/02/02	3:27:09	204	10/31/02	12:23:56	249	12/20/02	20:19.0	27
10/02/02	3:42:28	205	10/31/02	12:31:12	250	12/20/02	24:54.0	28
10/02/02	3:58:58	206	10/31/02	12:40:18	251	12/20/02	29:38.0	29
10/02/02	4:15:46	207	10/31/02	12:53:22	252	12/20/02	35:03.0	30
10/02/02	4:36:08	208	11/01/02	10:55:03	253	12/23/02	45:26.0	31
10/02/02	4:56:30	209	11/01/02	11:39:15	254	12/24/02	31:39.0	32
						12/25/02	45:40.0	33

Appendix 3e. Precipitation data for the upper Brush Creek rain gauge.

Date	Time	Tip No. (0.01 in)	Date	Time	Tip No. (0.01 in)	Date	Time	Tip No. (0.01 in)
9/28/2001	14:55:03	0	3/4/2002	10:44:29	39	3/14/2002	10:24:15	84
10/5/2001	1:08:16	1	3/4/2002	11:07:27	40	3/14/2002	10:26:10	85
10/15/2001	9:54:29	2	3/4/2002	11:07:28	41	3/14/2002	10:28:50	86
10/18/2001	11:52:24	3	3/4/2002	11:32:38	42	3/14/2002	10:28:51	87
10/18/2001	11:52:31	3	3/4/2002	11:37:24	43	3/15/2002	9:28:46	88
<i>No data due to animal tampering</i>			3/4/2002	11:37:25	44	3/17/2002	11:50:12	89
1/25/2002	2:55:13	0	3/4/2002	11:41:29	45	3/17/2002	11:59:27	90
1/30/2002	12:03:48	1	3/4/2002	11:41:29	46	3/17/2002	12:08:39	91
1/30/2002	12:15:33	2	3/4/2002	11:46:22	47	3/17/2002	12:19:27	92
1/30/2002	12:15:33	3	3/4/2002	11:50:56	48	3/17/2002	12:32:47	93
1/31/2002	11:32:38	4	3/4/2002	11:53:25	49	3/17/2002	12:32:48	94
1/31/2002	12:33:06	5	3/4/2002	11:56:10	50	3/17/2002	12:56:53	95
1/31/2002	12:39:47	6	3/4/2002	12:00:55	51	3/17/2002	1:50:45	96
1/31/2002	12:39:48	7	3/4/2002	12:04:11	52	3/17/2002	1:50:46	97
1/31/2002	12:58:33	8	3/4/2002	12:07:17	53	3/17/2002	2:04:54	98
1/31/2002	1:32:26	9	3/4/2002	12:15:17	54	3/17/2002	2:04:55	99
1/31/2002	2:04:48	10	3/4/2002	12:18:45	55	3/19/2002	9:19:13	100
2/10/2002	9:37:37	11	3/4/2002	12:18:46	56	3/19/2002	10:02:35	101
2/10/2002	9:41:49	12	3/4/2002	12:22:30	57	3/19/2002	10:02:35	102
2/10/2002	11:52:14	13	3/4/2002	12:22:31	58	3/19/2002	10:08:14	103
2/10/2002	11:52:15	14	3/4/2002	12:29:45	59	3/19/2002	10:08:15	104
2/15/2002	11:54:20	15	3/9/2002	9:33:51	60	3/19/2002	10:08:15	105
2/15/2002	11:54:20	16	3/9/2002	9:39:55	61	3/19/2002	10:11:28	106
2/15/2002	12:13:48	17	3/9/2002	9:42:52	62	3/19/2002	10:11:29	107
2/15/2002	12:16:25	18	3/9/2002	9:47:27	63	3/19/2002	10:13:21	108
2/15/2002	12:17:43	19	3/9/2002	9:53:36	64	3/19/2002	10:13:21	109
2/15/2002	12:19:01	20	3/14/2002	9:18:11	65	3/19/2002	10:15:41	110
2/15/2002	12:20:42	21	3/14/2002	9:19:48	66	3/19/2002	10:15:42	111
2/15/2002	12:22:41	22	3/14/2002	9:22:32	67	3/19/2002	10:17:57	112
2/15/2002	12:22:42	23	3/14/2002	10:10:31	68	3/19/2002	10:17:57	113
2/15/2002	12:24:10	24	3/14/2002	10:11:14	69	3/19/2002	10:21:57	114
2/15/2002	12:27:01	25	3/14/2002	10:11:15	70	3/19/2002	10:21:58	115
2/15/2002	12:30:04	26	3/14/2002	10:11:59	71	3/19/2002	10:27:21	116
2/15/2002	12:32:48	27	3/14/2002	10:12:48	72	3/19/2002	10:27:22	117
2/15/2002	12:37:42	28	3/14/2002	10:13:33	73	3/25/2002	9:36:53	118
2/15/2002	12:43:37	29	3/14/2002	10:13:34	74	3/25/2002	9:36:54	119
2/15/2002	12:43:37	30	3/14/2002	10:14:28	75	3/25/2002	10:10:49	120
2/19/2002	9:12:00	31	3/14/2002	10:15:21	76	3/25/2002	10:19:01	121
2/19/2002	9:15:36	32	3/14/2002	10:16:24	77	3/25/2002	10:21:11	122
2/21/2002	9:09:17	33	3/14/2002	10:17:28	78	3/25/2002	10:24:01	123
2/25/2002	12:00:03	34	3/14/2002	10:18:40	79	3/25/2002	10:27:09	124
2/26/2002	9:58:18	35	3/14/2002	10:19:59	80	3/25/2002	10:27:10	125
2/26/2002	12:38:20	36	3/14/2002	10:21:22	81	3/25/2002	10:31:30	126
2/26/2002	12:38:20	37	3/14/2002	10:22:52	82	3/25/2002	10:32:20	127
3/3/2002	1:58:00	38	3/14/2002	10:22:52	83	3/25/2002	10:33:46	128

Appendix 3e. (continued).

Date	Time	Tip No. (0.01 in)	Date	Time	Tip No. (0.01 in)	Date	Time	Tip No. (0.01 in)
3/25/2002	10:35:37	129	7/21/2002	8:16:55	7	7/21/2002	8:30:07	52
3/25/2002	10:37:38	130	7/21/2002	8:16:55	8	7/21/2002	8:30:25	53
3/25/2002	10:39:18	131	7/21/2002	8:17:32	9	7/21/2002	8:30:55	54
3/25/2002	10:42:30	132	7/21/2002	8:18:09	10	7/21/2002	8:32:50	55
3/25/2002	10:43:40	133	7/21/2002	8:18:33	11	7/21/2002	8:35:40	56
3/26/2002	7:34:07	134	7/21/2002	8:18:34	12	7/21/2002	8:55:05	57
5/11/2002	8:40:41	135	7/21/2002	8:19:02	13	7/21/2002	11:55:53	58
5/11/2002	11:35:45	136	7/21/2002	8:19:03	14	7/22/2002	12:17:18	59
5/12/2002	12:02:04	137	7/21/2002	8:19:23	15	7/22/2002	2:41:53	60
5/12/2002	12:39:30	138	7/21/2002	8:19:50	16	7/22/2002	2:51:11	61
5/12/2002	8:11:11	139	7/21/2002	8:20:09	17	7/22/2002	3:02:11	62
5/12/2002	11:17:17	140	7/21/2002	8:20:26	18	7/22/2002	3:13:03	63
5/12/2002	11:19:21	141	7/21/2002	8:20:50	19	7/22/2002	3:13:03	64
5/12/2002	11:19:22	142	7/21/2002	8:20:50	20	7/30/2002	3:46:02	65
5/12/2002	11:21:17	143	7/21/2002	8:21:11	21	8/3/2002	7:26:25	66
5/12/2002	11:23:03	144	7/21/2002	8:21:11	22	8/3/2002	7:37:03	67
5/12/2002	11:24:40	145	7/21/2002	8:21:27	23	8/3/2002	7:45:22	68
5/12/2002	11:26:19	146	7/21/2002	8:21:27	24	8/3/2002	7:53:54	69
5/12/2002	11:27:54	147	7/21/2002	8:21:46	25	8/3/2002	7:53:54	70
5/12/2002	11:29:29	148	7/21/2002	8:22:07	26	8/3/2002	8:55:56	71
5/12/2002	11:31:34	149	7/21/2002	8:22:07	27	8/3/2002	9:48:49	72
5/12/2002	11:33:45	150	7/21/2002	8:22:24	28	8/3/2002	9:56:30	73
5/12/2002	11:35:53	151	7/21/2002	8:22:24	29	8/3/2002	9:56:31	74
5/12/2002	11:38:09	152	7/21/2002	8:22:53	30	8/3/2002	9:58:23	75
5/12/2002	11:39:58	153	7/21/2002	8:23:25	31	8/3/2002	9:58:24	76
5/12/2002	11:41:58	154	7/21/2002	8:23:25	32	8/3/2002	10:00:22	77
5/12/2002	11:41:59	155	7/21/2002	8:24:17	33	8/3/2002	10:00:22	78
5/12/2002	11:44:11	156	7/21/2002	8:25:42	34	8/3/2002	10:03:55	79
5/12/2002	11:46:34	157	7/21/2002	8:25:56	35	8/3/2002	10:10:35	80
5/12/2002	11:52:15	158	7/21/2002	8:26:07	36	8/3/2002	10:15:32	81
5/12/2002	11:56:57	159	7/21/2002	8:26:19	37	8/3/2002	10:33:59	82
5/12/2002	11:56:58	160	7/21/2002	8:26:20	38	8/3/2002	11:14:30	83
5/12/2002	12:01:11	161	7/21/2002	8:26:35	39	8/4/2002	12:06:14	84
5/12/2002	12:01:11	162	7/21/2002	8:26:52	40	8/4/2002	12:10:05	85
5/12/2002	12:04:54	163	7/21/2002	8:27:11	41	8/4/2002	12:10:06	86
5/16/2002	11:15:26	163	7/21/2002	8:27:28	42	8/4/2002	12:31:20	87
No data - Rain gauge burned from the Hayman fire			7/21/2002	8:27:46	43	8/4/2002	12:34:58	88
			7/21/2002	8:27:46	44	8/4/2002	12:34:58	89
7/17/2002	4:39:03	0	7/21/2002	8:28:02	45	8/4/2002	12:42:38	90
7/21/2002	7:57:52	1	7/21/2002	8:28:02	46	8/5/2002	1:50:28	91
7/21/2002	8:10:20	2	7/21/2002	8:28:29	47	8/5/2002	1:52:22	92
7/21/2002	8:14:13	3	7/21/2002	8:28:54	48	8/5/2002	1:52:22	93
7/21/2002	8:15:40	4	7/21/2002	8:29:24	49	8/5/2002	1:57:31	94
7/21/2002	8:15:41	5	7/21/2002	8:29:56	50	8/5/2002	1:58:30	95
7/21/2002	8:16:15	6	7/21/2002	8:29:56	51	8/5/2002	1:58:31	96

Appendix 3e. (continued).

Date	Time	Tip No. (0.01 in)	Date	Time	Tip No. (0.01 in)	Date	Time	Tip No. (0.01 in)
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8/5/2002	1:59:56	98	8/21/2002	4:16:34	143	9/8/2002	23:49:45	10
8/5/2002	2:08:40	99	8/21/2002	4:16:35	144	9/8/2002	23:50:33	11
8/5/2002	2:08:40	100	8/21/2002	4:19:11	145	9/8/2002	23:52:39	12
8/5/2002	2:10:06	101	8/21/2002	4:26:06	146	9/8/2002	23:52:40	13
8/5/2002	2:11:25	102	8/21/2002	4:30:54	147	9/9/2002	0:04:45	14
8/5/2002	2:12:26	103	8/21/2002	5:07:50	148	9/9/2002	0:04:45	15
8/5/2002	2:13:43	104	8/21/2002	5:07:50	149	9/9/2002	1:03:23	16
8/5/2002	2:14:12	105	8/21/2002	9:36:41	150	9/9/2002	2:54:35	17
8/5/2002	2:14:41	106	8/27/2002	7:59:59	151	9/9/2002	19:06:20	18
8/5/2002	2:16:05	107	8/27/2002	8:24:30	152	9/9/2002	20:40:06	19
8/5/2002	4:32:15	108	8/27/2002	8:27:41	153	9/9/2002	20:40:07	20
8/5/2002	4:32:16	109	8/27/2002	8:27:42	154	9/9/2002	20:45:22	21
8/5/2002	4:50:59	110	8/27/2002	8:29:55	155	9/9/2002	20:52:01	22
8/5/2002	6:13:02	111	8/27/2002	8:35:14	156	9/9/2002	20:52:02	23
8/5/2002	6:13:03	112	8/27/2002	8:35:15	157	9/9/2002	20:55:40	24
8/5/2002	7:10:17	113	8/27/2002	9:02:07	158	9/9/2002	20:55:41	25
8/5/2002	7:24:59	114	8/28/2002	2:51:59	159	9/9/2002	20:59:55	26
8/5/2002	7:24:59	115	8/28/2002	2:53:37	160	9/9/2002	21:04:29	27
8/6/2002	4:41:09	116	8/28/2002	2:57:22	161	9/9/2002	21:09:52	28
8/6/2002	4:48:06	117	8/28/2002	2:57:23	162	9/9/2002	21:16:47	29
8/6/2002	4:49:41	118	8/28/2002	3:58:28	163	9/9/2002	21:16:48	30
8/6/2002	4:49:41	119	8/28/2002	3:59:33	164	9/9/2002	21:20:02	31
8/6/2002	5:19:01	120	8/28/2002	4:00:17	165	9/9/2002	21:22:00	32
8/7/2002	4:42:52	121	8/28/2002	4:00:58	166	9/9/2002	21:22:00	33
8/7/2002	4:50:05	122	8/28/2002	4:02:09	167	9/9/2002	21:24:26	34
8/7/2002	4:59:20	123	8/28/2002	4:03:44	168	9/9/2002	21:28:37	35
8/7/2002	7:07:38	124	8/28/2002	4:07:46	169	9/9/2002	21:37:34	36
8/7/2002	7:07:39	125	8/28/2002	4:12:52	170	9/9/2002	22:09:06	37
8/7/2002	7:12:56	126	8/28/2002	4:19:34	171	9/9/2002	22:09:06	38
8/7/2002	7:12:57	127	8/29/2002	3:00:46	172	9/9/2002	23:04:43	39
8/7/2002	7:18:03	128	8/29/2002	3:00:46	173	9/9/2002	23:23:55	40
8/7/2002	7:18:04	129	8/29/2002	3:03:24	174	9/9/2002	23:23:55	41
8/7/2002	9:18:17	130	8/29/2002	3:04:02	175	9/9/2002	23:31:17	42
8/19/2002	4:02:50	131	8/29/2002	3:06:58	176	9/9/2002	23:39:33	43
8/19/2002	4:25:33	132	8/30/2002	6:42:51	176	9/9/2002	23:39:33	44
8/21/2002	4:02:16	133	8/30/2002	18:56:53	0	9/9/2002	23:47:48	45
8/21/2002	4:02:16	134	8/30/2002	18:56:55	1	9/9/2002	23:52:58	46
8/21/2002	4:04:22	135	9/8/2002	23:32:02	2	9/9/2002	23:58:32	47
8/21/2002	4:04:23	136	9/8/2002	23:32:03	3	9/10/2002	0:02:26	48
8/21/2002	4:07:03	137	9/8/2002	23:39:06	4	9/10/2002	0:08:34	49
8/21/2002	4:07:03	138	9/8/2002	23:44:00	5	9/10/2002	0:12:03	50
8/21/2002	4:09:58	139	9/8/2002	23:46:53	6	9/10/2002	0:12:03	51
8/21/2002	4:09:58	140	9/8/2002	23:47:40	7	9/10/2002	0:15:22	52
8/21/2002	4:12:37	141	9/8/2002	23:48:16	8	9/10/2002	0:15:23	53

Appendix 3e. (continued).

Tip No.			Tip No.			Tip No.		
Date	Time	(0.01 in)	Date	Time	(0.01 in)	Date	Time	(0.01 in)
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9/10/2002	0:17:31	55	9/12/2002	16:39:03	100	9/18/2002	19:32:13	145
9/10/2002	0:19:32	56	9/12/2002	16:39:31	101	9/18/2002	19:39:35	146
9/10/2002	0:21:35	57	9/12/2002	16:39:56	102	9/18/2002	19:47:23	147
9/10/2002	0:23:44	58	9/12/2002	16:42:07	103	9/18/2002	19:54:05	148
9/10/2002	0:23:45	59	9/12/2002	16:42:08	104	9/18/2002	20:03:16	149
9/10/2002	0:26:00	60	9/12/2002	16:45:08	105	9/18/2002	20:13:47	150
9/10/2002	0:29:11	61	9/12/2002	16:45:49	106	9/18/2002	20:33:33	151
9/10/2002	0:33:50	62	9/12/2002	16:45:50	107	9/18/2002	21:12:51	152
9/10/2002	0:40:04	63	9/12/2002	16:46:14	108	9/18/2002	21:12:51	153
9/10/2002	0:40:04	64	9/12/2002	16:46:40	109	9/18/2002	21:54:14	154
9/10/2002	0:49:42	65	9/12/2002	16:47:12	110	9/19/2002	0:55:45	155
9/10/2002	1:05:33	66	9/12/2002	16:48:25	111	9/21/2002	14:55:27	155
9/10/2002	1:05:34	67	9/12/2002	16:48:25	112	9/21/2002	14:38:36	0
9/10/2002	1:31:20	68	9/12/2002	16:50:47	113	9/26/2002	3:59:02	1
9/10/2002	2:17:33	69	9/13/2002	14:22:49	114	9/26/2002	3:59:02	2
9/10/2002	2:41:37	70	9/13/2002	14:22:50	115	9/26/2002	4:08:21	3
9/10/2002	2:41:37	71	9/18/2002	13:02:22	116	9/26/2002	4:16:28	4
9/10/2002	3:16:49	72	9/18/2002	13:02:23	117	9/26/2002	4:16:28	5
9/10/2002	3:40:33	73	9/18/2002	13:05:11	118	9/26/2002	4:23:03	6
9/10/2002	3:54:57	74	9/18/2002	13:13:41	119	9/26/2002	4:36:08	7
9/10/2002	4:12:45	75	9/18/2002	13:49:51	120	9/26/2002	10:35:14	8
9/10/2002	4:22:41	76	9/18/2002	13:59:13	121	9/26/2002	10:40:02	9
9/10/2002	4:36:16	77	9/18/2002	14:01:14	122	9/26/2002	10:44:07	10
9/10/2002	5:12:11	78	9/18/2002	14:05:10	123	9/26/2002	10:50:42	11
9/10/2002	5:51:04	79	9/18/2002	14:08:54	124	9/26/2002	10:57:24	12
9/10/2002	5:51:04	80	9/18/2002	14:13:11	125	9/26/2002	11:05:21	13
9/10/2002	6:26:42	81	9/18/2002	14:13:12	126	9/26/2002	11:14:45	14
9/10/2002	6:37:35	82	9/18/2002	14:16:55	127	9/26/2002	11:14:46	15
9/10/2002	6:57:01	83	9/18/2002	14:24:38	128	9/27/2002	14:24:06	16
9/10/2002	7:15:07	84	9/18/2002	17:58:03	129	10/1/2002	18:36:56	17
9/10/2002	7:38:05	85	9/18/2002	18:14:23	130	10/1/2002	18:57:25	18
9/10/2002	7:50:21	86	9/18/2002	18:22:24	131	10/1/2002	19:05:15	19
9/12/2002	16:21:23	87	9/18/2002	18:29:58	132	10/1/2002	19:05:16	20
9/12/2002	16:23:41	88	9/18/2002	18:29:59	133	10/1/2002	19:11:15	21
9/12/2002	16:32:26	89	9/18/2002	18:43:42	134	10/1/2002	19:16:31	22
9/12/2002	16:32:57	90	9/18/2002	18:51:55	135	10/1/2002	19:21:18	23
9/12/2002	16:33:20	91	9/18/2002	18:56:59	136	10/1/2002	19:21:18	24
9/12/2002	16:33:21	92	9/18/2002	19:01:51	137	10/1/2002	19:26:39	25
9/12/2002	16:33:52	93	9/18/2002	19:05:42	138	10/1/2002	19:34:02	26
9/12/2002	16:34:29	94	9/18/2002	19:08:27	139	10/1/2002	19:38:18	27
9/12/2002	16:35:36	95	9/18/2002	19:12:04	140	10/1/2002	19:41:26	28
9/12/2002	16:35:36	96	9/18/2002	19:16:17	141	10/1/2002	19:44:11	29
9/12/2002	16:37:59	97	9/18/2002	19:21:49	142	10/1/2002	19:47:18	30
9/12/2002	16:38:00	98	9/18/2002	19:21:50	143	10/1/2002	19:51:33	31

Appendix 3e. (continued).

Tip No.			Tip No.			Tip No.		
Date	Time	(0.01 in)	Date	Time	(0.01 in)	Date	Time	(0.01 in)
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10/1/2002	19:55:55	33	10/1/2002	22:04:07	78	10/26/2002	21:09:28	123
10/1/2002	19:59:48	34	10/1/2002	22:04:08	79	10/26/2002	21:14:21	124
10/1/2002	20:02:43	35	10/1/2002	22:09:09	80	10/26/2002	21:18:52	125
10/1/2002	20:05:03	36	10/1/2002	22:15:07	81	10/26/2002	21:24:38	126
10/1/2002	20:07:11	37	10/1/2002	22:15:08	82	10/26/2002	21:32:27	127
10/1/2002	20:09:14	38	10/1/2002	22:23:19	83	10/26/2002	21:32:27	128
10/1/2002	20:12:51	39	10/1/2002	22:38:17	84	10/26/2002	21:38:11	129
10/1/2002	20:12:51	40	10/1/2002	22:53:14	85	10/26/2002	21:43:02	130
10/1/2002	20:26:22	41	10/1/2002	22:58:01	86	10/26/2002	22:21:09	131
10/1/2002	20:37:26	42	10/1/2002	23:04:26	87	10/27/2002	2:26:20	132
10/1/2002	20:40:09	43	10/1/2002	23:08:02	88	10/27/2002	2:26:20	133
10/1/2002	20:41:50	44	10/1/2002	23:08:03	89	10/27/2002	2:50:11	134
10/1/2002	20:43:19	45	10/1/2002	23:12:16	90	10/27/2002	2:50:11	135
10/1/2002	20:44:27	46	10/1/2002	23:15:51	91	10/27/2002	3:21:18	136
10/1/2002	20:45:50	47	10/1/2002	23:21:56	92	10/27/2002	7:23:36	137
10/1/2002	20:45:51	48	10/1/2002	23:28:02	93	10/27/2002	7:57:06	138
10/1/2002	20:47:19	49	10/1/2002	23:28:02	94	10/27/2002	7:57:07	139
10/1/2002	20:47:20	50	10/1/2002	23:34:59	95	10/27/2002	8:18:09	140
10/1/2002	20:49:31	51	10/1/2002	23:43:37	96	10/27/2002	8:34:27	141
10/1/2002	20:52:20	52	10/1/2002	23:43:38	97	10/27/2002	8:45:23	142
10/1/2002	20:54:45	53	10/1/2002	23:51:35	98	10/27/2002	8:56:58	143
10/1/2002	20:57:47	54	10/1/2002	23:51:35	99	10/27/2002	9:04:47	144
10/1/2002	20:57:48	55	10/1/2002	23:59:31	100	10/27/2002	9:12:13	145
10/1/2002	21:00:11	56	10/2/2002	0:10:45	101	10/27/2002	9:19:43	146
10/1/2002	21:03:16	57	10/2/2002	0:21:21	102	10/27/2002	9:19:43	147
10/1/2002	21:08:25	58	10/2/2002	0:21:22	103	10/27/2002	9:26:12	148
10/1/2002	21:08:26	59	10/2/2002	0:34:08	104	10/27/2002	9:33:49	149
10/1/2002	21:13:32	60	10/2/2002	0:34:09	105	10/27/2002	9:33:50	150
10/1/2002	21:17:10	61	10/3/2002	2:33:18	106	10/27/2002	9:41:27	151
10/1/2002	21:17:10	62	10/3/2002	2:33:19	107	10/27/2002	9:52:10	152
10/1/2002	21:20:56	63	10/3/2002	5:06:53	108	10/30/2002	9:01:13	153
10/1/2002	21:26:18	64	10/3/2002	5:06:53	109	10/31/2002	10:47:43	154
10/1/2002	21:26:18	65	10/23/2002	9:37:00	110	10/31/2002	10:49:47	155
10/1/2002	21:33:05	66	10/23/2002	9:39:44	111	10/31/2002	10:51:34	156
10/1/2002	21:37:31	67	10/23/2002	9:39:45	112	10/31/2002	10:53:53	157
10/1/2002	21:41:36	68	10/23/2002	9:41:52	113	10/31/2002	10:55:54	158
10/1/2002	21:44:31	69	10/24/2002	9:18:11	114	10/31/2002	10:57:44	159
10/1/2002	21:44:31	70	10/24/2002	9:23:46	115	10/31/2002	10:59:43	160
10/1/2002	21:47:17	71	10/24/2002	9:23:47	116	10/31/2002	11:01:41	161
10/1/2002	21:50:32	72	10/26/2002	20:18:35	117	10/31/2002	11:01:41	162
10/1/2002	21:54:08	73	10/26/2002	20:18:35	118	10/31/2002	11:03:43	163
10/1/2002	21:54:09	74	10/26/2002	20:41:28	119	10/31/2002	11:03:43	164
10/1/2002	21:57:15	75	10/26/2002	20:50:15	120	10/31/2002	11:05:37	165
10/1/2002	22:00:13	76	10/26/2002	20:56:41	121	10/31/2002	11:07:44	166

Appendix 3e. (continued).

Date	Time	Tip No. (0.01 in)	Date	Time	Tip No. (0.01 in)
10/31/2002	11:09:40	167	12/20/2002	12:58:31	15
10/31/2002	11:11:54	168	12/20/2002	13:00:53	16
10/31/2002	11:13:49	169	12/20/2002	13:00:53	17
10/31/2002	11:15:44	170	12/20/2002	13:03:42	18
10/31/2002	11:15:45	171	12/20/2002	13:03:42	19
10/31/2002	11:17:17	172	12/20/2002	13:07:00	20
10/31/2002	11:17:17	173	12/20/2002	13:07:00	21
10/31/2002	11:19:27	174	12/20/2002	13:10:00	22
10/31/2002	11:19:28	175	12/20/2002	13:10:00	23
10/31/2002	11:21:22	176	12/20/2002	13:13:06	24
10/31/2002	11:23:52	177	12/20/2002	13:16:32	25
10/31/2002	11:23:53	178	12/20/2002	13:19:51	26
10/31/2002	11:26:45	179	12/20/2002	13:23:23	27
10/31/2002	11:26:46	180	12/20/2002	13:26:19	28
10/31/2002	11:29:30	181	12/20/2002	13:26:20	29
10/31/2002	11:29:31	182	12/20/2002	13:30:25	30
10/31/2002	11:32:14	183	12/20/2002	13:34:25	31
10/31/2002	11:36:23	184	12/20/2002	13:39:18	32
10/31/2002	11:36:23	185	12/20/2002	13:44:53	33
10/31/2002	11:40:53	186	12/20/2002	13:50:00	34
11/3/2002	9:01:02	187	12/23/2002	13:28:28	35
11/3/2002	9:06:48	188			
11/3/2002	9:06:48	189			
11/3/2002	9:12:28	190			
11/3/2002	9:18:04	191			
11/3/2002	9:27:45	192			
11/9/2002	13:10:58	193			
11/9/2002	13:10:59	194			
11/11/2002	13:32:34	195			
11/13/2002	14:30:40	195			
11/13/2002	15:42:39	0			
11/15/2002	10:57:03	1			
11/15/2002	10:57:04	2			
11/15/2002	11:43:46	3			
11/15/2002	15:00:28	4			
11/16/2002	10:19:33	5			
11/16/2002	10:24:46	6			
11/16/2002	10:34:39	7			
11/25/2002	10:25:24	8			
11/25/2002	10:28:09	9			
11/25/2002	11:34:48	10			
11/25/2002	12:05:38	11			
12/19/2002	10:19:44	12			
12/19/2002	10:19:44	13			
12/20/2002	12:55:39	14			

Appendix 3f. Precipitation data for the lower Brush Creek rain gauge.

Tip No.			Tip No.			Tip No.		
Date	Time	(0.01 in)	Date	Time	(0.01 in)	Date	Time	(0.01 in)
10/25/01	14:42:23	0	11/23/01	7:50:52	45	12/28/01	11:26:51	90
11/07/01	18:18:07	1	11/23/01	12:04:38	46	01/03/02	13:49:59	91
11/07/01	18:45:56	2	11/26/01	12:26:43	47	01/03/02	14:24:54	92
11/07/01	18:45:56	3	11/29/01	12:09:45	48	01/06/02	13:29:57	93
11/07/01	19:05:12	4	11/29/01	12:16:15	49	01/06/02	13:37:00	94
11/07/01	19:09:45	5	12/01/01	10:29:20	50	01/06/02	13:50:53	95
11/07/01	19:18:39	6	12/01/01	12:39:18	51	01/06/02	14:21:00	96
11/07/01	19:30:20	7	12/01/01	12:39:19	52	01/06/02	14:21:01	97
11/07/01	19:30:20	8	12/01/01	13:35:25	53	01/10/02	11:07:55	98
11/07/01	21:29:20	9	12/01/01	14:03:30	54	01/10/02	11:10:08	99
11/07/01	21:29:21	10	12/01/01	14:09:10	55	01/10/02	11:10:09	100
11/08/01	9:52:50	11	12/01/01	14:49:39	56	01/10/02	12:11:18	101
11/08/01	9:52:51	12	12/01/01	15:06:54	57	01/10/02	12:11:19	102
11/08/01	10:49:38	13	12/01/01	15:27:45	58	01/10/02	12:16:33	103
11/08/01	10:49:39	14	12/01/01	16:18:45	59	01/10/02	12:16:33	104
11/08/01	10:51:49	15	12/02/01	11:12:43	60	01/10/02	12:29:14	105
11/08/01	10:51:49	16	12/02/01	11:26:17	61	01/10/02	12:49:37	106
11/08/01	10:54:31	17	12/02/01	11:38:16	62	01/11/02	11:14:09	107
11/08/01	10:57:15	18	12/02/01	11:44:18	63	01/11/02	11:32:39	108
11/08/01	10:59:44	19	12/02/01	11:44:19	64	01/11/02	11:32:39	109
11/08/01	10:59:44	20	12/02/01	11:50:52	65	01/11/02	11:32:40	110
11/08/01	11:01:46	21	12/02/01	11:58:57	66	01/11/02	11:38:57	111
11/08/01	11:04:18	22	12/02/01	11:58:58	67	01/11/02	11:38:58	112
11/08/01	11:04:19	23	12/02/01	12:12:43	68	01/25/02	11:10:44	113
11/08/01	11:08:08	24	12/02/01	12:23:55	69	01/25/02	11:14:30	114
11/08/01	11:12:39	25	12/02/01	12:31:21	70	01/25/02	11:14:30	115
11/08/01	11:15:43	26	12/02/01	12:37:27	71	01/25/02	11:24:52	116
11/18/01	13:25:20	27	12/02/01	12:43:17	72	01/25/02	11:24:53	117
11/18/01	13:42:03	28	12/17/01	12:46:03	73	01/25/02	11:25:53	118
11/18/01	13:42:04	29	12/17/01	12:47:34	74	01/25/02	11:25:53	119
11/19/01	10:59:02	30	12/17/01	12:47:34	75	01/25/02	11:26:49	120
11/19/01	11:01:10	31	12/17/01	12:48:54	76	01/25/02	11:27:59	121
11/19/01	11:01:10	32	12/17/01	12:50:18	77	01/25/02	11:27:59	122
11/19/01	11:04:01	33	12/17/01	12:51:26	78	01/25/02	11:29:08	123
11/19/01	11:04:02	34	12/17/01	12:53:22	79	01/25/02	11:30:36	124
11/19/01	11:06:38	35	12/17/01	12:55:15	80	01/25/02	11:31:55	125
11/19/01	11:09:30	36	12/17/01	12:55:16	81	01/25/02	11:33:25	126
11/19/01	11:09:31	37	12/17/01	12:57:09	82	01/25/02	11:33:26	127
11/19/01	11:11:56	38	12/17/01	12:58:56	83	01/25/02	11:34:41	128
11/19/01	11:18:26	39	12/17/01	13:01:21	84	01/25/02	11:36:10	129
11/19/01	11:18:26	40	12/17/01	13:03:42	85	01/25/02	11:36:11	130
11/22/01	20:48:27	41	12/17/01	13:08:03	86	01/25/02	11:37:18	131
11/22/01	20:48:27	42	12/17/01	13:08:03	87	01/25/02	11:39:28	132
11/22/01	22:02:48	43	12/28/01	11:11:55	88	01/25/02	11:41:02	133
11/22/01	22:02:48	44	12/28/01	11:11:56	89	01/25/02	11:41:02	134

Appendix 3f. (continued).

Tip No.			Tip No.			Tip No.		
Date	Time	(0.01 in)	Date	Time	(0.01 in)	Date	Time	(0.01 in)
01/25/02	11:42:50	135	03/19/02	11:04:51	41	05/12/02	10:16:54	86
01/25/02	11:44:35	136	03/19/02	11:06:15	42	05/12/02	10:27:41	87
01/25/02	11:47:53	137	03/19/02	11:10:02	43	05/14/02	5:13:17	88
01/25/02	13:33:04	137	03/19/02	11:10:02	44	05/14/02	5:13:24	88
03/04/02	2:42:14	0	03/19/02	11:11:54	45	05/14/02	4:13:42	0
03/09/02	10:50:03	1	03/25/02	11:22:20	46	05/16/02	1:40:15	1
03/09/02	10:50:04	2	03/25/02	11:22:21	47	05/16/02	1:43:17	2
03/09/02	11:15:14	3	03/25/02	11:30:06	48	05/16/02	1:59:00	3
03/09/02	11:15:14	4	03/25/02	11:31:33	49	05/16/02	2:05:35	4
03/14/02	11:38:16	5	03/25/02	11:32:43	50	05/16/02	2:13:45	5
03/14/02	11:38:16	6	03/25/02	11:33:57	51	05/16/02	2:13:45	6
03/14/02	11:39:20	7	03/25/02	11:34:55	52	05/16/02	4:23:43	7
03/14/02	11:40:25	8	03/25/02	11:35:56	53	05/16/02	4:31:31	8
03/14/02	11:40:25	9	03/25/02	11:36:53	54	05/16/02	4:46:43	9
03/14/02	11:41:33	10	03/25/02	11:36:54	55	05/16/02	4:52:46	10
03/14/02	11:42:55	11	03/25/02	11:38:03	56	05/16/02	4:57:47	11
03/14/02	11:43:53	12	03/25/02	11:38:56	57	05/16/02	5:01:51	12
03/14/02	11:45:07	13	03/25/02	11:39:56	58	05/16/02	5:02:39	13
03/14/02	11:46:13	14	03/25/02	11:39:56	59	05/16/02	5:03:05	14
03/14/02	11:47:16	15	03/25/02	11:40:55	60	05/16/02	5:03:37	15
03/14/02	11:49:09	16	03/25/02	11:42:56	61	05/16/02	5:04:14	16
03/14/02	11:49:10	17	03/25/02	11:42:56	62	05/16/02	5:04:14	17
03/14/02	11:51:02	18	03/25/02	11:43:47	63	05/16/02	5:04:55	18
03/14/02	11:51:03	19	03/25/02	5:47:23	64	05/16/02	5:04:55	19
03/14/02	11:53:43	20	05/11/02	11:30:39	65	05/16/02	5:05:41	20
03/14/02	12:01:56	21	05/11/02	11:50:05	66	05/16/02	5:07:05	21
03/14/02	12:03:52	22	05/11/02	11:50:06	67	05/16/02	5:07:42	22
03/16/02	12:32:53	23	05/12/02	12:26:34	68	05/16/02	5:08:38	23
03/16/02	12:32:54	24	05/12/02	1:04:40	69	05/16/02	5:14:15	24
03/16/02	1:51:58	25	05/12/02	1:28:59	70	05/16/02	6:26:45	25
03/16/02	2:04:28	26	05/12/02	1:29:00	71	05/16/02	8:33:29	26
03/16/02	2:31:40	27	05/12/02	2:07:09	72	05/18/02	8:24:06	27
03/16/02	2:56:29	28	05/12/02	2:07:09	73	05/20/02	3:32:05	28
03/16/02	3:03:34	29	05/12/02	7:30:39	74	05/20/02	3:45:19	29
03/16/02	3:24:01	30	05/12/02	8:12:03	75	05/20/02	3:45:19	30
03/16/02	3:24:02	31	05/12/02	8:12:03	76	05/20/02	3:49:22	31
03/17/02	11:24:10	32	05/12/02	8:35:29	77	05/23/02	7:27:52	32
03/17/02	11:45:02	33	05/12/02	8:35:29	78	05/23/02	7:31:21	33
03/19/02	10:56:56	34	05/12/02	9:19:57	79	05/23/02	7:34:34	34
03/19/02	10:59:53	35	05/12/02	9:30:44	80	05/23/02	7:37:50	35
03/19/02	10:59:54	36	05/12/02	9:45:51	81	05/23/02	7:37:51	36
03/19/02	11:01:56	37	05/12/02	9:45:51	82	05/23/02	7:40:37	37
03/19/02	11:02:49	38	05/12/02	9:56:07	83	05/23/02	7:40:37	38
03/19/02	11:03:42	39	05/12/02	9:56:07	84	05/23/02	7:43:24	39
03/19/02	11:04:50	40	05/12/02	10:05:23	85	05/23/02	7:49:14	40

Appendix 3f. (continued).

Tip No.			Tip No.			Tip No.		
Date	Time	(0.01 in)	Date	Time	(0.01 in)	Date	Time	(0.01 in)
05/23/02	7:52:47	41	05/24/02	11:02:00	86	06/20/02	8:07:47	131
05/23/02	7:57:44	42	05/24/02	11:20:52	87	06/20/02	8:15:42	132
05/23/02	7:57:44	43	05/24/02	11:24:08	88	06/20/02	8:36:44	133
05/23/02	8:02:59	44	05/24/02	11:24:09	89	06/20/02	8:38:40	134
05/23/02	8:18:24	45	05/24/02	11:28:05	90	06/20/02	8:43:30	135
05/23/02	8:18:25	46	05/24/02	11:28:05	91	06/20/02	9:00:47	136
05/23/02	8:23:36	47	05/24/02	11:32:26	92	06/20/02	9:08:04	137
05/23/02	8:23:37	48	05/24/02	11:36:07	93	06/20/02	9:08:04	138
05/23/02	8:30:52	49	05/24/02	11:43:14	94	06/20/02	9:11:08	139
05/23/02	8:39:59	50	06/03/02	11:28:21	95	06/21/02	5:42:34	140
05/23/02	8:55:44	51	06/07/02	6:17:06	96	06/21/02	5:42:35	141
05/23/02	9:15:59	52	06/07/02	6:17:13	97	06/21/02	5:44:51	142
05/24/02	12:08:01	53	06/07/02	6:17:14	98	06/21/02	5:44:51	143
05/24/02	12:08:01	54	06/07/02	6:17:15	99	06/21/02	5:47:59	144
05/24/02	12:23:34	55	06/07/02	6:17:15	100	06/21/02	5:57:02	145
05/24/02	12:36:58	56	06/07/02	6:17:16	101	06/21/02	5:58:01	146
05/24/02	12:59:53	57	06/07/02	6:17:16	102	06/21/02	5:58:02	147
05/24/02	1:26:43	58	06/07/02	6:17:18	103	06/21/02	5:58:52	148
05/24/02	1:44:48	59	06/07/02	6:17:18	104	06/21/02	6:00:54	149
05/24/02	2:52:52	60	06/19/02	10:53:54	105	06/21/02	6:02:42	150
05/24/02	3:08:31	61	06/19/02	10:54:58	106	06/21/02	6:03:43	151
05/24/02	6:17:50	62	06/19/02	10:56:11	107	06/21/02	6:04:40	152
05/24/02	6:17:50	63	06/19/02	10:58:33	108	06/21/02	8:41:14	153
05/24/02	6:21:23	64	06/19/02	10:58:33	109	06/21/02	8:44:22	154
05/24/02	6:26:08	65	06/19/02	11:07:45	110	06/21/02	8:46:46	155
05/24/02	6:26:08	66	06/19/02	11:09:38	111	06/21/02	8:53:41	156
05/24/02	6:30:32	67	06/20/02	4:46:27	112	06/21/02	8:53:41	157
05/24/02	6:36:14	68	06/20/02	4:46:27	113	06/21/02	9:14:33	158
05/24/02	6:36:15	69	06/20/02	4:47:24	114	06/21/02	9:14:34	159
05/24/02	6:44:44	70	06/20/02	4:47:24	115	06/23/02	7:37:31	160
05/24/02	6:44:44	71	06/20/02	4:48:09	116	06/23/02	7:37:31	161
05/24/02	6:51:36	72	06/20/02	4:48:40	117	07/05/02	8:18:05	162
05/24/02	6:51:36	73	06/20/02	4:48:57	118	07/05/02	9:12:52	163
05/24/02	10:05:40	74	06/20/02	4:48:58	119	07/05/02	9:12:53	164
05/24/02	10:16:55	75	06/20/02	4:49:17	120	07/05/02	9:29:35	165
05/24/02	10:20:44	76	06/20/02	4:49:38	121	07/05/02	9:45:12	166
05/24/02	10:24:07	77	06/20/02	4:50:04	122	07/05/02	10:15:59	167
05/24/02	10:26:32	78	06/20/02	4:50:30	123	07/05/02	11:18:41	168
05/24/02	10:26:33	79	06/20/02	4:50:31	124	07/06/02	2:51:45	169
05/24/02	10:29:09	80	06/20/02	4:52:35	125	07/06/02	2:51:46	170
05/24/02	10:32:13	81	06/20/02	8:02:11	126	07/06/02	3:33:05	171
05/24/02	10:35:44	82	06/20/02	8:03:04	127	07/06/02	4:21:31	172
05/24/02	10:37:48	83	06/20/02	8:04:18	128	07/06/02	4:21:32	173
05/24/02	10:41:12	84	06/20/02	8:05:14	129	07/06/02	5:13:24	174
05/24/02	10:43:40	85	06/20/02	8:07:46	130	07/06/02	5:21:59	175

Appendix 3f. (continued).

Date	Time	Tip No. (0.01 in)	Date	Time	Tip No. (0.01 in)	Date	Time	Tip No. (0.01 in)
07/06/02	5:26:49	176	07/06/02	6:48:36	221	07/22/02	12:38:35	41
07/06/02	5:31:59	177	07/06/02	6:57:37	222	07/22/02	12:38:35	42
07/06/02	5:32:00	178	07/06/02	7:12:21	223	07/22/02	12:57:42	43
07/06/02	5:35:19	179	07/15/02	12:54:35	223	07/22/02	2:41:59	44
07/06/02	5:35:19	180	07/15/02	1:38:09	0	07/23/02	3:46:54	45
07/06/02	5:38:35	181	07/21/02	7:45:47	1	07/23/02	3:46:55	46
07/06/02	5:38:36	182	07/21/02	8:06:24	2	08/03/02	3:03:47	47
07/06/02	5:40:45	183	07/21/02	8:06:24	3	08/03/02	7:08:08	48
07/06/02	5:43:22	184	07/21/02	8:16:43	4	08/03/02	7:08:08	49
07/06/02	5:45:34	185	07/21/02	8:23:31	5	08/03/02	7:11:21	50
07/06/02	5:47:16	186	07/21/02	8:25:10	6	08/03/02	7:22:58	51
07/06/02	5:48:21	187	07/21/02	8:25:11	7	08/03/02	7:22:58	52
07/06/02	5:49:33	188	07/21/02	8:26:55	8	08/03/02	7:30:53	53
07/06/02	5:50:41	189	07/21/02	8:29:36	9	08/03/02	7:35:15	54
07/06/02	5:52:19	190	07/21/02	8:30:20	10	08/03/02	7:38:04	55
07/06/02	5:52:20	191	07/21/02	8:30:33	11	08/03/02	7:38:04	56
07/06/02	5:54:03	192	07/21/02	8:30:33	12	08/03/02	7:41:45	57
07/06/02	5:55:07	193	07/21/02	8:30:46	13	08/03/02	7:45:53	58
07/06/02	5:55:47	194	07/21/02	8:30:57	14	08/03/02	7:52:08	59
07/06/02	5:56:49	195	07/21/02	8:31:14	15	08/03/02	8:00:04	60
07/06/02	5:57:27	196	07/21/02	8:31:14	16	08/03/02	8:23:58	61
07/06/02	5:57:27	197	07/21/02	8:31:30	17	08/03/02	9:17:46	62
07/06/02	5:58:20	198	07/21/02	8:31:48	18	08/03/02	9:48:40	63
07/06/02	5:58:20	199	07/21/02	8:31:49	19	08/03/02	9:50:06	64
07/06/02	5:59:09	200	07/21/02	8:32:06	20	08/03/02	9:51:22	65
07/06/02	5:59:43	201	07/21/02	8:32:07	21	08/03/02	9:52:53	66
07/06/02	6:00:34	202	07/21/02	8:32:29	22	08/03/02	9:58:31	67
07/06/02	6:02:12	203	07/21/02	8:32:48	23	08/03/02	10:01:07	68
07/06/02	6:03:12	204	07/21/02	8:32:48	24	08/03/02	10:01:08	69
07/06/02	6:04:04	205	07/21/02	8:33:08	25	08/03/02	10:03:24	70
07/06/02	6:04:05	206	07/21/02	8:33:23	26	08/03/02	10:05:24	71
07/06/02	6:04:53	207	07/21/02	8:33:44	27	08/03/02	10:10:14	72
07/06/02	6:06:05	208	07/21/02	8:33:56	28	08/03/02	10:14:30	73
07/06/02	6:07:40	209	07/21/02	8:34:16	29	08/03/02	10:16:39	74
07/06/02	6:09:56	210	07/21/02	8:34:36	30	08/03/02	10:18:43	75
07/06/02	6:13:48	211	07/21/02	8:34:58	31	08/03/02	10:24:16	76
07/06/02	6:16:52	212	07/21/02	8:35:15	32	08/03/02	10:27:30	77
07/06/02	6:16:52	213	07/21/02	8:35:36	33	08/03/02	11:09:45	78
07/06/02	6:19:54	214	07/21/02	8:35:51	34	08/04/02	2:36:04	79
07/06/02	6:19:54	215	07/21/02	8:36:26	35	08/05/02	12:13:21	80
07/06/02	6:28:14	216	07/21/02	8:37:22	36	08/05/02	1:43:43	81
07/06/02	6:34:36	217	07/21/02	8:39:55	37	08/05/02	1:52:52	82
07/06/02	6:39:32	218	07/21/02	8:39:55	38	08/05/02	1:52:52	83
07/06/02	6:43:14	219	07/21/02	8:51:45	39	08/05/02	1:54:04	84
07/06/02	6:48:35	220	07/22/02	12:15:00	40	08/05/02	1:55:03	85

Appendix 3f. (continued).

Date	Time	Tip No. (0.01 in)	Date	Time	Tip No. (0.01 in)	Date	Time	Tip No. (0.01 in)
08/05/02	1:56:40	86	08/21/02	4:14:19	131	09/09/02	22:16:37	17
08/05/02	2:00:02	87	08/21/02	4:15:07	132	09/09/02	23:22:08	18
08/05/02	2:55:42	88	08/21/02	4:15:08	133	09/09/02	23:41:30	19
08/05/02	6:20:01	89	08/21/02	4:15:34	134	09/09/02	23:51:05	20
08/05/02	6:20:02	90	08/21/02	4:16:28	135	09/09/02	23:58:53	21
08/05/02	7:22:50	91	08/21/02	4:17:10	136	09/10/02	0:04:55	22
08/06/02	4:43:28	92	08/21/02	4:18:02	137	09/10/02	0:12:23	23
08/06/02	4:46:48	93	08/21/02	4:18:58	138	09/10/02	0:16:30	24
08/06/02	5:07:42	94	08/21/02	4:20:25	139	09/10/02	0:26:48	25
08/06/02	5:10:29	95	08/21/02	4:22:33	140	09/10/02	0:34:49	26
08/06/02	5:10:30	96	08/21/02	4:25:28	141	09/10/02	0:48:22	27
08/06/02	5:14:20	97	08/21/02	4:27:18	142	09/10/02	1:05:53	28
08/06/02	5:16:14	98	08/21/02	4:28:34	143	09/10/02	1:21:02	29
08/06/02	5:16:15	99	08/21/02	4:32:00	144	09/10/02	2:25:02	30
08/06/02	5:26:18	100	08/21/02	4:32:01	145	09/10/02	3:08:15	31
08/07/02	4:32:41	101	08/21/02	5:54:59	146	09/10/02	3:31:50	32
08/07/02	4:32:41	102	08/21/02	5:55:00	147	09/10/02	3:56:46	33
08/07/02	4:39:45	103	08/22/02	3:37:57	148	09/10/02	4:17:01	34
08/07/02	4:42:13	104	08/27/02	9:01:37	149	09/10/02	4:31:48	35
08/07/02	4:42:14	105	08/27/02	9:03:49	150	09/10/02	4:45:53	36
08/07/02	7:03:24	106	08/27/02	10:29:28	151	09/10/02	5:33:06	37
08/07/02	7:03:25	107	08/27/02	10:29:29	152	09/10/02	6:13:27	38
08/07/02	7:15:12	108	08/28/02	12:23:00	153	09/10/02	6:46:00	39
08/08/02	6:20:18	109	08/28/02	4:02:43	154	09/10/02	7:03:07	40
08/08/02	6:20:18	110	08/28/02	4:02:43	155	09/10/02	7:22:31	41
08/19/02	3:52:45	111	08/28/02	4:15:47	156	09/10/02	7:43:10	42
08/19/02	4:41:10	112	08/28/02	4:15:48	157	09/10/02	7:53:31	43
08/19/02	4:53:53	113	08/31/02	2:14:36	157	09/12/02	16:22:36	44
08/21/02	4:05:43	114	08/31/02	8:25:27	0	09/12/02	16:23:47	45
08/21/02	4:08:52	115	08/31/02	8:25:29	1	09/12/02	16:24:34	46
08/21/02	4:09:26	116	09/08/02	23:33:10	2	09/12/02	16:25:15	47
08/21/02	4:10:04	117	09/08/02	23:37:22	3	09/12/02	16:25:56	48
08/21/02	4:10:24	118	09/08/02	23:42:33	4	09/12/02	16:28:05	49
08/21/02	4:10:25	119	09/09/02	2:13:37	5	09/12/02	16:30:19	50
08/21/02	4:10:40	120	09/09/02	19:03:52	6	09/12/02	16:30:49	51
08/21/02	4:11:06	121	09/09/02	19:11:56	7	09/12/02	16:31:04	52
08/21/02	4:11:29	122	09/09/02	19:22:02	8	09/12/02	16:31:25	53
08/21/02	4:11:55	123	09/09/02	20:50:29	9	09/12/02	16:31:39	54
08/21/02	4:12:15	124	09/09/02	20:56:45	10	09/12/02	16:32:03	55
08/21/02	4:12:15	125	09/09/02	21:01:46	11	09/12/02	16:32:52	56
08/21/02	4:12:39	126	09/09/02	21:06:35	12	09/12/02	16:33:23	57
08/21/02	4:12:52	127	09/09/02	21:12:51	13	09/12/02	16:34:00	58
08/21/02	4:13:11	128	09/09/02	21:19:13	14	09/12/02	16:34:56	59
08/21/02	4:13:26	129	09/09/02	21:26:03	15	09/12/02	16:36:00	60
08/21/02	4:13:49	130	09/09/02	21:34:36	16	09/12/02	16:37:38	61

Appendix 3f. (continued).

Tip No.			Tip No.			Tip No.		
Date	Time	(0.01 in)	Date	Time	(0.01 in)	Date	Time	(0.01 in)
09/12/02	16:39:01	62	09/27/02	2:27:07	15	10/01/02	9:51:51	60
09/12/02	16:41:38	63	09/27/02	2:28:19	16	10/01/02	9:51:51	61
09/12/02	16:46:54	64	09/27/02	2:28:19	17	10/01/02	9:55:53	62
09/12/02	17:50:44	65	10/01/02	6:57:09	18	10/01/02	10:01:32	63
09/12/02	17:53:22	66	10/01/02	7:08:17	19	10/01/02	10:08:43	64
09/12/02	17:55:15	67	10/01/02	7:15:32	20	10/01/02	10:18:24	65
09/12/02	17:58:45	68	10/01/02	7:15:33	21	10/01/02	10:18:25	66
09/18/02	14:39:18	69	10/01/02	7:30:30	22	10/01/02	10:25:01	67
09/18/02	17:57:38	70	10/01/02	7:30:31	23	10/01/02	10:56:57	68
09/18/02	18:11:10	71	10/01/02	7:39:38	24	10/01/02	11:08:38	69
09/18/02	18:19:54	72	10/01/02	7:43:30	25	10/01/02	11:14:47	70
09/18/02	18:36:34	73	10/01/02	7:48:29	26	10/01/02	11:19:48	71
09/18/02	18:51:22	74	10/01/02	7:54:17	27	10/01/02	11:19:49	72
09/18/02	18:56:25	75	10/01/02	7:59:55	28	10/01/02	11:30:27	73
09/18/02	19:01:58	76	10/01/02	8:02:57	29	10/01/02	11:30:28	74
09/18/02	19:09:54	77	10/01/02	8:05:47	30	10/01/02	11:41:11	75
09/18/02	19:14:19	78	10/01/02	8:08:30	31	10/01/02	11:54:02	76
09/18/02	19:20:11	79	10/01/02	8:11:22	32	10/01/02	11:54:02	77
09/18/02	19:25:57	80	10/01/02	8:16:47	33	10/02/02	12:04:37	78
09/18/02	19:32:31	81	10/01/02	8:29:10	34	10/02/02	12:11:58	79
09/18/02	19:38:18	82	10/01/02	8:34:11	35	10/02/02	12:18:32	80
09/18/02	19:47:49	83	10/01/02	8:37:30	36	10/02/02	12:32:46	81
09/18/02	19:54:58	84	10/01/02	8:37:31	37	10/03/02	2:28:13	82
09/18/02	20:07:12	85	10/01/02	8:39:07	38	10/03/02	2:36:16	83
09/18/02	20:21:57	86	10/01/02	8:40:27	39	10/03/02	2:48:29	84
09/18/02	21:12:12	87	10/01/02	8:42:00	40	10/23/02	9:42:43	85
09/18/02	22:03:26	88	10/01/02	8:42:01	41	10/23/02	9:42:44	86
09/19/02	0:56:55	89	10/01/02	8:44:50	42	10/24/02	9:58:15	87
09/19/02	1:12:50	90	10/01/02	8:44:51	43	10/24/02	10:00:41	88
09/20/02	13:23:12	90	10/01/02	8:47:00	44	10/24/02	10:03:51	89
09/20/02	5:52:08	0	10/01/02	8:49:26	45	10/24/02	10:10:05	90
09/26/02	4:10:28	1	10/01/02	8:52:59	46	10/24/02	10:10:06	91
09/26/02	4:10:29	2	10/01/02	8:53:00	47	10/24/02	10:44:58	92
09/26/02	4:16:47	3	10/01/02	8:57:13	48	10/24/02	10:50:56	93
09/26/02	4:23:12	4	10/01/02	8:57:13	49	10/24/02	10:55:27	94
09/26/02	4:23:12	5	10/01/02	9:01:01	50	10/24/02	11:03:42	95
09/26/02	4:32:52	6	10/01/02	9:10:42	51	10/26/02	8:12:21	96
09/26/02	5:01:27	7	10/01/02	9:17:01	52	10/26/02	8:12:22	97
09/26/02	5:01:28	8	10/01/02	9:24:55	53	10/26/02	8:32:56	98
09/26/02	10:44:50	9	10/01/02	9:31:30	54	10/26/02	8:43:27	99
09/26/02	10:46:24	10	10/01/02	9:38:21	55	10/26/02	8:52:45	100
09/26/02	10:55:38	11	10/01/02	9:38:22	56	10/26/02	8:52:46	101
09/26/02	11:11:12	12	10/01/02	9:41:53	57	10/26/02	9:02:01	102
09/26/02	11:25:29	13	10/01/02	9:45:13	58	10/26/02	9:10:28	103
09/26/02	11:25:30	14	10/01/02	9:48:08	59	10/26/02	9:13:56	104

Appendix 3f. (continued).

Tip No.			Tip No.			Tip No.		
Date	Time	(0.01 in)	Date	Time	(0.01 in)	Date	Time	(0.01 in)
10/26/02	9:17:15	105	10/29/02	12:32:38	150	12/27/02	12:42:38	11
10/26/02	9:17:15	106	10/29/02	10:05:57	151	12/27/02	12:45:48	12
10/26/02	9:21:50	107	10/29/02	11:50:36	152	12/27/02	12:45:48	13
10/26/02	9:21:51	108	10/29/02	11:50:37	153	12/27/02	1:03:55	14
10/26/02	9:27:44	109	10/29/02	12:01:19	154	12/27/02	1:03:55	15
10/26/02	9:34:26	110	10/29/02	12:01:20	155	12/27/02	1:08:44	16
10/26/02	9:40:13	111	10/30/02	11:36:17	156	12/27/02	1:20:01	17
10/26/02	9:41:57	112	10/30/02	11:36:17	157	12/27/02	1:25:26	18
10/26/02	9:41:57	113	10/30/02	11:41:15	158	12/27/02	1:42:23	19
10/26/02	9:43:53	114	10/30/02	11:43:17	159	12/27/02	1:42:24	20
10/26/02	9:45:25	115	10/30/02	11:50:43	160	12/27/02	1:50:37	21
10/26/02	9:47:25	116	10/30/02	11:50:43	161			
10/26/02	9:48:55	117	10/30/02	12:04:05	162			
10/26/02	9:50:25	118	10/30/02	12:06:43	163			
10/26/02	9:50:25	119	10/30/02	12:17:16	164			
10/26/02	9:51:27	120	10/30/02	12:17:16	165			
10/26/02	9:51:28	121	10/31/02	10:01:35	166			
10/26/02	9:52:53	122	10/31/02	10:01:35	167			
10/26/02	9:52:53	123	10/31/02	10:03:05	168			
10/26/02	9:54:23	124	10/31/02	10:03:06	169			
10/26/02	9:54:24	125	10/31/02	10:05:26	170			
10/26/02	9:57:05	126	10/31/02	10:05:27	171			
10/26/02	9:57:06	127	10/31/02	10:09:12	172			
10/26/02	9:59:26	128	10/31/02	10:19:04	173			
10/26/02	10:01:21	129	11/01/02	9:41:30	174			
10/26/02	10:03:38	130	11/01/02	9:41:30	175			
10/26/02	10:06:47	131	11/03/02	10:56:07	176			
10/26/02	10:09:23	132	11/03/02	10:57:38	177			
10/26/02	10:12:01	133	11/03/02	10:59:22	178			
10/26/02	10:12:02	134	11/03/02	11:03:07	179			
10/26/02	10:14:30	135	11/03/02	11:05:27	180			
10/26/02	10:14:30	136	11/03/02	11:11:12	181			
10/26/02	10:17:04	137	11/09/02	2:03:13	182			
10/26/02	10:17:05	138	11/13/02	1:52:20	182			
10/26/02	10:19:26	139	11/13/02	3:04:11	0			
10/26/02	10:22:22	140	11/15/02	10:08:38	1			
10/26/02	10:22:23	141	11/15/02	3:57:57	2			
10/26/02	10:26:59	142	11/25/02	12:04:18	3			
10/26/02	10:26:59	143	11/25/02	12:11:28	4			
10/26/02	10:34:29	144	11/25/02	12:18:22	5			
10/26/02	10:52:09	145	12/27/02	12:31:03	6			
10/26/02	11:16:58	146	12/27/02	12:33:37	7			
10/26/02	11:50:23	147	12/27/02	12:36:20	8			
10/28/02	11:43:22	148	12/27/02	12:36:21	9			
10/29/02	12:32:37	149	12/27/02	12:39:18	10			

**Appendix 4. Location, material, and person hours spent on sediment fence construction
(a) 2001, and (b) 2002.**

Site	No.	Date of Constr.	Location	Fabric length (m)	No. of rebar	Person Hours		Total
						Transport	Building	
USG	1\1	6/25/01	Road	5.5	10	0.25 hrs. (5)	2 hrs. (5)	11.25 hrs.*
USG	1\2	6/25/01	Road	5.5	9	0.25 hrs. (5)	2 hrs. (5)	11.25 hrs.*
USG	1\3	6/25/01	Swale	5.9	11	0.25 hrs. (5)	2 hrs. (5)	11.25 hrs.*
USG	1\4	6/26/01	Swale	4.7	10	0.25 hrs. (1)	2 hrs. (1)	2.25 hrs.
USG	1\5	6/26/01	Road	4.6	9	0.15 hrs. (1)	2 hrs. (1)	2.15 hrs.
USG	1\6	6/26/01	Swale	3.6	8	0.15 hrs. (1)	2 hrs. (1)	2.15 hrs.
USG	1\7	6/26/01	Road	6.6	12	0.15 hrs. (1)	2 hrs. (1)	2.15 hrs.
USG	1\8	7/3/01	Swale	4	10	0.16 hrs. (3)	1.5 hrs. (3)	4.98 hrs.
USG	1\9	7/3/01	Road	4.3	10	0.16 hrs. (3)	1.5 hrs. (3)	4.98 hrs.
USG	1\10	7/16/01	Road	12.8	16	0	4 hrs. (1)	4 hrs.
USG	1\11	7/16/01	Road	9	12	0	3 hrs. (1)	3 hrs.
USG	1\12	8/9/01	Swale	4.4	9	0	2 hrs. (3)	6 hrs.
USG	1\13	8/9/01	Swale	4	8	0	2 hrs. (3)	6 hrs.
USG	1\14	8/9/01	Swale	5.5	11	0	2.5 hrs. (2)	5 hrs.
USG	1\15	8/9/01	Swale	6.5	12	0	2.5 hrs. (2)	5 hrs.
USG	1\16	8/14/01	Swale	3.5	8	0	1 hr. (3)	3 hrs.
USG	1\17	8/14/01	Swale	4.7	10	0	1 hr. (3)	3 hrs.
USG	1\18	8/9/01	Swale	6.1	12	0	1.5 hrs. (2)	3 hrs.
USG	1\19	8/9/01	Swale	4.8	10	0	1.5 hrs. (2)	3 hrs.
USG	1\20	8/13/01	Swale	5.3	11	0	1.25 hrs.(2)	2.5 hrs.
USG	1\21	8/13/01	Swale	4.1	9	0	1.25 hrs.(2)	2.5 hrs.
USG	1\22	8/13/01	Swale	4.3	10	0	1.3 hrs. (2)	2.6 hrs.
USG	1\23	8/13/01	Swale	4.4	10	0	1.3 hrs. (2)	2.6 hrs.
USG	1\24	8/14/01	Swale	3.8	8	0.25 hrs.(3)	1 hr. (3)	3.75 hrs.
USG	1\25	8/14/01	Swale	4	9	0.25 hrs.(3)	1 hr. (3)	3.75 hrs.
USG	1\26	8/14/01	Swale	4.8	10	0.16 hrs. (3)	1 hr. (3)	3.48 hrs.
USG	1\27	8/14/01	Swale	4.5	10	0.16 hrs. (3)	1 hr. (3)	3.48 hrs.
USG	1\28	8/15/01	Swale	5	10	0.16 hrs. (2)	1.5 hrs. (2)	3.32 hrs.
USG	1\29	8/15/01	Swale	5	11	0.16 hrs. (2)	1.5 hrs. (2)	3.32 hrs.

* Includes training of three people

() Number in parentheses refers to the number of persons.

USG - Upper Saloon Gulch

TRM - Trumbull

SC - Spring Creek

Appendix 4a (continued).

Site	No.	Date of Constr.	Location	Fabric length (m)	No. of rebar	Person Hours		Total
						Transport	Building	
TRM	2\1	6/27/01	Swale	6	11	0.33 hrs. (3)	1.5 hrs (3)	5.49 hrs.
TRM	2\2	6/27/01	Swale	5.5	11	0.33 hrs. (3)	1.5 hrs (3)	5.49 hrs.
TRM	2\3	6/27/01	Swale	5.5	11	0.33 hrs. (3)	1.5 hrs (3)	5.49 hrs.
TRM	2\4	6/27/01	Swale	5	10	0.33 hrs. (3)	1.5 hrs (3)	5.49 hrs.
TRM	2\5	6/28/01	Swale	4.8	9	0.33 hrs. (3)	3.5 hrs. (1)	4.49 hrs.
TRM	2\5\1	11/19/01	Swale	5.2	9	0.25 hrs. (2)	1.0 hrs. (2)	2.50hrs.
TRM	2\6	6/28/01	Swale	5.6	11	0.33 hrs (3)	3.5 hrs. (1)	4.49 hrs.
TRM	2\7	7/3/01	Road	6.2	14	0.16 hrs. (3)	1.5 hrs. (3)	4.98 hrs.
TRM	2\8	7/3/01	Road	4.3	9	0.16 hrs. (3)	1.5 hrs. (3)	4.98 hrs.
TRM	2\9	7/23/01	Road	5.3	10	0	1.15 hrs. (2)	2.3 hrs.
TRM	2\10	7/23/01	Bare Hillslope	8.5	14	0	2.0 hrs. (4)	8.0 hrs.
TRM	2\11	10/05/201	Swale	5.5	9	0.25 hrs. (3)	1.0 hrs. (3)	3.75 hrs.
TRM	2\12	9/15/01	Swale	4.8	9	0.25 hrs. (1)	1.75 hrs.(1)	2.0 hrs.
TRM	2\13	9/15/01	Swale	4.5	8	0.25 hrs. (1)	1.75 hrs.(1)	2.0 hrs.
TRM	2\14	9/15/01	Swale	4.5	8	0.25 hrs. (1)	1.75 hrs.(1)	2.0 hrs.
TRM	2\15	9/15/01	Swale	5	9	0.25 hrs. (1)	1.75 hrs.(1)	2.0 hrs.
TRM	2\16	9/21/01	Swale	4.9	9	0.25 hrs. (2)	1.75 hrs.(1)	2.25 hrs.
TRM	2\17	9/21/01	Swale	4.7	9	0.25 hrs. (2)	1.75 hrs.(1)	2.25 hrs.
TRM	2\19	9/21/01	Swale	4.2	8	0.25 hrs. (2)	1.75 hrs.(1)	2.25 hrs.
TRM	2\20	9/21/01	Swale	4.5	8	0.25 hrs. (2)	1.75 hrs.(1)	2.25 hrs.
TRM	2\21	9/28/201	Swale	5.05	8	0.25 hrs. (2)	1.0 hrs. (2)	2.5 hrs.
TRM	2\22	9/28/201	Swale	5.2	8	0.25 hrs. (2)	1.0 hrs. (2)	2.5 hrs.
TRM	2\23	10/5/01	Bare Hillslope	12.5	13	0.16 hrs. (3)	1.0 hrs. (3)	2.5 hrs.
SC	3\1	7/10/01	Swale	3.5	9	0	2 hrs. (2)	4 hrs.
SC	3\2	7/10/01	Road	6.5	11	0	2 hrs. (2)	4 hrs.
SC	3\3	7/10/01	Swale	3.2	7	0	2 hrs. (2)	4 hrs.
SC	3\4	7/10/01	Road	4.2	9	0	2 hrs. (2)	4 hrs.
SC	3\5	7/11/01	Road	5.5	12	0	2 hrs. (2)	4 hrs.
SC	3\6	7/11/01	Road	4.7	10	0	2 hrs. (2)	4 hrs.
SC	3\7	7/11/01	Road	3.8	8	0	2 hrs. (2)	4 hrs.
SC	3\8	7/11/01	Road	5.5	11	0	2 hrs. (2)	4 hrs.
SC	3\9	7/12/01	Road	6.7	12	0	2.5 hrs. (1)	2.5 hrs.
SC	3\10	7/12/01	Road	5.8	10	0	2.5 hrs. (1)	2.5 hrs.
SC	3\11	7/12/01	Road	5.3	9	0	2.5 hrs. (1)	2.5 hrs.

Appendix 4b. Location, materials, and person hours spent on sediment fence construction in 2002. If no rebar are indicated, the data are for rebuilding the fence after the Hayman fire.

Site	No.	Date of Reconstr.	Location	Fabric length (m)	No. of rebar	Person hours		Total
						Transport	Building	
USG	1\1	7/9/02	Road	5.5	0	0	0.8 hrs. (1)	0.8 hrs.
USG	1\2	7/9/02	Road	5.5	0	0	0.8 hrs. (1)	0.8 hrs.
USG	1\3	7/9/02	Swale	5.9	0	0	0.8 hrs. (1)	0.8 hrs.
USG	1\4	7/9/02	Swale	4.7	0	0	0.8 hrs. (1)	0.8 hrs.
USG	1\5	7/9/02	Road	4.6	0	0	0.8 hrs. (1)	0.8 hrs.
USG	1\7	7/3/02	Road	9.5	0	0	1.5 hrs. (2)	3 hrs.
USG	1\8	7/16/02	Swale	4	0	0	0.8 hrs. (1)	0.8 hrs.
USG	1\9	7/16/02	Swale	4.3	0	0	0.8 hrs. (1)	0.8 hrs.
USG	1\12	7/8/02	Swale	4.4	0	0	0.8 hrs. (1)	0.8 hrs.
USG	1\13	7/8/02	Swale	4	0	0	0.8 hrs. (1)	0.8 hrs.
USG	1\14	7/8/02	Swale	5.5	0	0	0.8 hrs. (1)	0.8 hrs.
USG	1\15	7/8/02	Swale	6.5	0	0	0.8 hrs. (1)	0.8 hrs.
USG	1\16	7/8/02	Swale	3.5	0	0	0.8 hrs. (1)	0.8 hrs.
USG	1\17	7/8/02	Swale	4.7	0	0	0.8 hrs. (1)	0.8 hrs.
USG	1\18	7/8/02	Swale	6.1	0	0	0.8 hrs. (1)	0.8 hrs.
USG	1\19	7/8/02	Swale	4.8	0	0	0.8 hrs. (1)	0.8 hrs.
USG	1\20	7/9/02	Swale	5.3	0	0	0.8 hrs. (1)	0.8 hrs.
USG	1\21	7/9/02	Swale	4.1	0	0	0.8 hrs. (1)	0.8 hrs.
USG	1\22	7/9/02	Swale	4.3	0	0	0.8 hrs. (1)	0.8 hrs.
USG	1\23	7/9/02	Swale	4.4	0	0	0.8 hrs. (1)	0.8 hrs.
USG	1\24	7/9/02	Swale	3.8	0	0	0.8 hrs. (1)	0.8 hrs.
USG	1\25	7/9/02	Swale	4	0	0	0.8 hrs. (1)	0.8 hrs.
USG	1\26	7/16/02	Swale	4.8	0	0	0.8 hrs. (1)	0.8 hrs.
USG	1\27	7/16/02	Swale	4.5	0	0	0.8 hrs. (1)	0.8 hrs.
USG	1\28	7/16/02	Swale	5	0	0	0.8 hrs. (1)	0.8 hrs.
USG	1\29	7/16/02	Swale	5	0	0	0.8 hrs. (1)	0.8 hrs.

Appendix 4b. (continued).

Site	No.	Date of Constr.	Location	Fabric length (m)	No. of rebar	Person hours		Total
						Transport	Building	
TRM	2\24	7/2/2002	Road	10	12	0	1.2 hrs. (3)	3.6 hrs.
TRM	2\25	8/2/2002	Road	8.5	10	0	1.5 hrs. (1)	1.5 hrs.
TRM	2\26	8/7/2002	Road	8	8	0	1.5 hrs. (1)	1.5 hrs.
TRM	2\27	8/7/2002	Road	10.5	8	0	1.5 hrs. (1)	1.5 hrs.
SC	3\13	5/21/2002	Road	7.5	8	0	1.5 hrs. (2)	3 hrs.
SC	3\14	5/23/2002	Road	6	10	0	2 hrs. (1)	2 hrs.
SC	3\15	7/3/2002	Road	10	13	0	1.2 hrs. (2)	2.4 hrs.
USG	1\4 E	7/29/2002	Swale	7	10	0	1 hrs. (2)	2 hrs.
USG	1\4 W	7/29/2002	Swale	7.5	10	0	1 hrs. (2)	2 hrs.
USG	1\30	7/29/2002	Swale	7	10	0	1.5 hrs. (3)	4.5 hrs.
USG	1\31	7/29/2002	Swale	7	10	0	1.5 hrs. (3)	4.5 hrs.
USG	1\32	7/31/2002	Swale	8.5	9	0	1.2 hrs. (1)	1.2 hrs.
USG	1\33	7/31/2002	Swale	9	9	0	1.2 hrs. (1)	1.2 hrs.

Appendix 4c. Location materials, and time spent adding a second sediment fence at an existing location.

Site	No.	Date of Doubling	Location	Fabric length (m)	No. of rebar	Person hours		Total
						Transport	Building	
USG	1\8	7/19/2002	Swale	5.2	8	0.2 hrs. (2)	1 hrs. (2)	2.4 hrs.
USG	1\9	7/19/2002	Swale	4	7	0.2 hrs. (2)	1 hrs. (2)	2.4 hrs.
USG	1\16	7/30/2002	Swale	5	9	0.2 hrs. (3)	1.5 hrs. (3)	5.1 hrs.
USG	1\17	7/30/2002	Swale	5	9	0.2 hrs. (3)	1.5 hrs. (3)	5.1 hrs.
USG	1\20	7/19/2002	Swale	4.8	7	0.2 hrs. (2)	1 hrs. (2)	2.4 hrs.
USG	1\21	7/19/2002	Swale	5.2	8	0.2 hrs. (2)	1 hrs. (2)	2.4 hrs.
USG	1\22	7/19/2002	Swale	5.2	8	0.2 hrs. (2)	1 hrs. (2)	2.4 hrs.
USG	1\23	7/19/2002	Swale	4.5	7	0.2 hrs. (2)	1 hrs. (2)	2.4 hrs.
USG	1\28	7/29/2002	Swale	5	9	0.2 hrs. (3)	1.5 hrs. (3)	5.1 hrs.
USG	1\29	7/29/2002	Swale	5.5	8	0.2 hrs. (3)	1 hrs. (3)	3.6 hrs.
SC	3\5	5/23/2002	Road	8	10	0	2 hrs. (1)	2 hrs.
TRM	2\2	5/22/2005	Swale	7	10	0	2 hrs. (1)	2 hrs.
TRM	2\4	5/22/2005	Swale	5.5	9	0	2 hrs. (1)	2 hrs.
TRM	2\9	5/22/2005	Road	8.6	11	0	2.5 hrs (1)	2.5 hrs.

Appendix 4c. (continued).

Site	No.	Date of Tripling	Location	Fabric length (m)	No. of rebar	Person Hours		Total
						Transport	Building	
USG	1\16	7/30/2002	Swale	5	9	0.2 hrs. (3)	1.5 hrs. (3)	5.1 hrs.
USG	1\17	7/30/2002	Swale	5	9	0.2 hrs. (3)	1.5 hrs. (3)	5.1 hrs.
USG	1\20	7/30/2002	Swale	8	7	0.2 hrs. (3)	1 hrs. (3)	3.6 hrs.
USG	1\21	7/30/2002	Swale	5.2	8	0.2 hrs. (3)	1 hrs. (3)	3.6 hrs.
USG	1\22	7/30/2002	Swale	7	9	0.2 hrs. (2)	1 hrs. (2)	2.4 hrs.
USG	1\23	7/30/2002	Swale	5	9	0.2 hrs. (2)	1.2 hrs. (2)	2.8 hrs.

Appendix 5a. Percent ground cover for the swales in Upper Saloon Gulch in 2002 after the Hayman fire but before any post-fire treatments.

Site	Swale no.	Location		Ground cover (%)				
				Ash	Bare	Litter & downed wood	Vegetation	Rocks
USG	1\8	Swale	Treatment	55	42	3	0	0
USG	1\9	Swale	Control	52	45	0	3	0
USG	1\12	Swale	Control	40	54	4	2	< 1
USG	1\13	Swale	Hydromulch	41	51	7	1	< 1
USG	1\14	Swale	Hydromulch	37	56	7	0	< 1
USG	1\15	Swale	Control	37	51	8	4	< 1
USG	1\16	Swale	Hydromulch	25	69	4	0	2
USG	1\17	Swale	Control	40	51	8	0	1
USG	1\18	Swale	Control	42	50	8	0	0
USG	1\19	Swale	Dry mulch	48	46	4	0	2
USG	1\20	Swale	Dry mulch	36	53	11	0	0
USG	1\21	Swale	Control	30	55	10	2	3
USG	1\22	Swale	Control	53	44	3	0	0
USG	1\23	Swale	Dry mulch	58	37	5	0	0
USG	1\24	Swale	Control	50	50	0	0	0
USG	1\25	Swale	Scar. and Seed.	62	35	3	0	0
USG	1\26	Swale	Control	50	30	7	1	12
USG	1\27	Swale	Scar. and Seed.	55	41	3	0	0
USG	1\28	Swale	Dry mulch	55	43	2	0	0
USG	1\29	Swale	Control	59	40	1	0	< 1

Appendix 5b. Ground cover for the swales in Trumbull in 2002 before and after thinning.

Swale no.	Location	Ground cover (%)							
		Litter and downed wood		Vegetation		Rock		Bare soil	
		Before thinning	After* thinning	Before thinning	After* thinning	Before thinning	After* thinning	Before thinning	After* thinning
2\1	Treatment	39	n.t.	6	n.t.	1	n.t.	54	n.t.
2\11	Control	79	n.t.	4	n.t.	0	n.t.	17	n.t.
2\2	Treatment	55	n.t.	6	n.t.	0	n.t.	39	n.t.
2\3	Control	67	n.t.	7	n.t.	0	n.t.	26	n.t.
2\4	Control	69	69	7	7	0	0	24	24
2\5	Treatment	58	58	0	0	0	0	42	42
2\5\1	Nested in 2\5	69	68	5	3	1	0	25	29
2\10	Bare hillslope	n.t.	n.t.	n.t.	n.t.	n.t.	n.t.	n.t.	n.t.
2\12	Control	82	82	16	16	0	0	2	2
2\13	Treatment	76	74	15	9	0	0	9	17
2\14	Control	82	82	13	13	0	0	5	5
2\15	Treatment	82	81	14	11	0	0	4	9
2\16	Control	66	66	20	20	0	0	14	14
2\17	Treatment	85	82	9	4	0	0	6	14
2\19	Treatment	63	73	25	5	2	2	10	20
2\20	Control	65	65	4	4	1	1	30	30
2\21	Treatment	74	73	13	6	0	0	13	21
2\22	Control	81	81	15	15	0	0	4	4
2\23	Bare hillslope	n.t.	n.t.	n.t.	n.t.	n.t.	n.t.	n.t.	n.t.

* values for control swales are the same as those before thinning.

n.t. = not treated.

Appendix 5c. Swale area as determined by ground transects and GPS.

Site	Swale no.	Area (m ²)	
		Direct measurement	GPS
USG	1\4	2312	3491
USG	1\6	8324	10958
USG	1\8	8760	9758
USG	1\9	7404	11678
USG	1\12	2438	2892
USG	1\13	2186	2691
USG	1\14	2573	3018
USG	1\15	3305	3685
USG	1\16	2573	2506
USG	1\17	1716	2134
USG	1\18	2133	2371
USG	1\19	964	997
USG	1\20	4782	5305
USG	1\21	4902	5907
USG	1\22	4185	5609
USG	1\23	9810	12677
USG	1\24	757	1423
USG	1\25	608	698
USG	1\26	5050	5733
USG	1\27	6015	4052
USG	1\28	2161	3208
USG	1\29	2193	2538
TRM	2\1	762	839
TRM	2\11	658	528
TRM	2\2	1024	1119
TRM	2\3	1236	1183
TRM	2\4	888	922
TRM	2\5	1625	1643
TRM	2\6	2421	2345
TRM	2\12	660	415
TRM	2\13	385	270
TRM	2\14	1597	1359
TRM	2\15	1406	972
TRM	2\16	735	567
TRM	2\17	338	312
TRM	2\19	853	644
TRM	2\20	417	316
TRM	2\21	1232	1410
TRM	2\22	1254	1133
SC	3\1	6115	13697
SC	3\3	6913	13034

USG - Upper Saloon Gulch

TRM - Trumbull

SC - Spring Creek

Appendix 6a. Soil water repellency for the swales in Trumbull.

Swale no.	Position in the swale	Depth (cm)				Notes	
		0	3	6	9		
2\1	Upper	56.37	69.47	72.75	72.75	Under canopy	6-wet
	Middle	56.37	51.26	72.75	72.75	Inter canopy	3-fine root
	Lower	41.5	72.75	72.75	72.75	Inter canopy	Bare soil
2\11	Upper	46.06	51.26	69.47	69.47	Inter canopy	0,3,6,9-fine root
	Middle	56.37	51.26	72.75	72.75	Under canopy	3-root
	Lower	51.26	41.5	72.75	72.75	Under canopy	
2\2	Upper	56.37	72.75	72.75	72.75	Under canopy	
	Middle	72.75	72.75	72.75	72.75	Inter canopy	
	Lower	51.26	41.5	72.75	72.75	Inter canopy	
2\3	Upper	51.26	51.26	72.75	72.75	Inter canopy	
	Middle	41.5	56.37	69.47	72.75	Under canopy	
	Lower	72.75	51.26	69.47	72.75	Inter canopy	
2\4	Upper	72.75	72.75	72.75	72.75	Inter canopy	
	Middle	41.5	41.5	51.26	56.37	Under canopy	
	Lower	56.37	56.37	72.75	72.75	Under canopy	
2\5	Upper	56.37	51.26	56.37	62.98	Inter canopy	
	Middle	56.37	56.37	56.37	72.75	Inter canopy	
	Lower	72.75	51.26	72.75	72.75	Inter canopy	
2\12	Upper	41.5	51.26	56.37	56.37	Inter canopy	
	Middle	41.5	56.37	69.47	36.95	Under canopy	6-wet 9-root
	Lower	36.95	46.06	56.37	56.37	Under canopy	
2\13	Upper	41.5	51.26	72.75	72.75	Inter canopy	
	Middle	72.75	41.5	72.75	72.75	Inter canopy	
	Lower	36.95	41.5	51.26	56.37	Under canopy	
2\14	Upper	36.95	41.5	72.75	72.75	Inter canopy	6-wet
	Middle	62.98	72.75	72.75	72.75	Under canopy	
	Lower	56.37	72.75	72.75	72.75	Under canopy	
2\15	Upper	56.37	51.26	72.75	72.75	Inter canopy	
	Middle	56.37	72.75	72.75	72.75	Under canopy	
	Lower	62.98	72.75	72.75	72.75	Under canopy	
2\16	Upper	62.98	72.75	72.75	72.75	Under canopy	
	Middle	72.75	72.75	72.75	72.75	Under canopy	
	Lower	41.5	56.37	72.75	72.75	Under canopy	

Appendix 6a. (continued).

Swale no.	Position in the swale	Depth (cm)				Notes
		0	3	6	9	
2\17	Upper	62.98	69.47	72.75	72.75	Under canopy
	Middle	62.98	72.75	72.75	72.75	Inter canopy 3,6,9-wet
	Lower	72.75	72.75	72.75	72.75	Under canopy 3,6,9-wet
2\19	Upper	51.26	72.75	72.75	72.75	Inter canopy
	Middle	51.26	56.37	69.47	56.37	Under canopy 9-root
	Lower	56.37	62.98	72.75	72.75	Inter canopy
2\20	Upper	36.95	36.95	41.5	41.5	Under canopy 3,6,9-root
	Middle	51.26	56.37	72.75	72.75	Under canopy
	Lower	72.75	72.75	72.75	72.75	Inter canopy
2\21	Upper	41.5	56.37	72.75	72.75	Inter canopy 6,9-wet
	Middle	41.5	72.75	72.75	72.75	Under canopy 3,6,9-wet
	Lower	56.37	72.75	72.75	72.75	Inter canopy
2\22	Upper	51.26	72.75	72.75	72.75	Inter canopy
	Middle	51.26	56.37	72.75	72.75	Inter canopy
	Lower	72.75	62.98	72.75	72.75	Under canopy 3,6,9-wet

Appendix 6b. Soil water repellency for the swales in Upper Saloon Gulch.

Swale no.	Position in the swale	Depth (cm)					Notes
		0	3	6	9	12	
1\13	Flat ridge	36.95	46.06	46.06	46.06	69.47	Inter canopy
	Left slope	41.5	46.06	69.47	72.75	72.75	Inter canopy
	Side slope	33.2	41.5	46.06	46.06	62.98	Under canopy
1\17	Flat ridge	46.06	51.26	62.98	72.75	72.75	Inter canopy
	Left ridge	36.95	46.06	51.26	62.98	72.75	Under canopy
	Right slope	41.5	46.06	51.26	72.75	62.98	Under canopy
1\19	Flat ridge	36.95	36.95	41.5	62.98	72.75	Under canopy
	Left ridge	36.95	46.06	46.06	51.26	72.75	Under canopy
	Right ridge	36.95	41.5	46.06	46.06	51.26	Under canopy
1\24	Flat ridge	41.5	51.26	62.98	72.75	72.75	Inter canopy
	Middle ridge	46.06	51.26	69.47	72.75	72.75	Inter canopy
	Right ridge	41.5	41.5	51.26	62.98	72.75	Under canopy
1\26	Flat bottom	36.95	41.5	51.26	62.98	72.75	Under canopy
	Left slope	41.5	46.06	62.98	72.75	72.75	Inter canopy
	Left slope	41.5	41.5	41.5	46.06	46.06	Under canopy
1\28	Flat bottom	41.5	51.26	51.26	51.26	69.47	Under canopy
	Left slope	41.5	56.37	69.47	56.37	69.47	Under canopy
	Right slope	41.5	69.47	72.75	72.75	72.75	Inter canopy
1\8	Left slope	41.5	56.37	69.47	56.37	69.47	Under canopy
	Right slope	41.5	51.26	56.37	69.47	72.75	Under canopy
	Right ridge	36.95	46.06	41.5	46.06	72.75	Inter canopy
1\31	Flat ridge	33.2	36.95	36.95	46.06	62.98	Under canopy
	Left slope	36.95	51.26	62.98	72.75	72.75	Under canopy
	Right slope	46.06	51.26	56.37	72.75	72.75	Inter canopy
1\21	Flat bottom	36.95	51.26	69.47	72.75	72.75	Inter canopy
	Left slope	41.5	51.26	62.98	69.47	72.75	Under canopy
	Right slope	46.06	56.37	51.26	56.37	69.47	Inter canopy
1\22	Flat bottom	36.95	46.06	46.06	46.06	56.37	Under canopy
	Middle ridge	41.5	56.37	69.47	72.75	72.75	Inter canopy
	Right slope	36.95	41.5	46.06	51.26	51.26	Inter canopy
1\32	Flat ridge	51.26	51.26	62.98	72.75	72.75	Inter canopy
	Left slope	41.5	46.06	56.37	69.47	72.75	Inter canopy
	Left ridge	36.95	46.06	51.26	72.75	69.47	Inter canopy
1\4E	Flat bottom	36.95	51.26	56.37	72.75	72.75	Inter canopy
	Left slope	36.95	36.95	46.06	69.47	72.75	Under canopy
	Right slope	36.95	36.95	36.95	62.98	72.75	Under canopy

Appendix 7. Crest gauge height in centimeters for four storms in Upper Saloon Gulch in 2002.

Swale no.	Rain event			
	21-Jul-02	30-Aug-02	21-Sep-02	11-Oct-02
1\8	28.00	n.a.	1.5	1.5
1\9	20.00	n.a.	1.5	1
1\12	8.00	1.25	0.5	0.5
1\13	8.50	1	0.5	0
1\14	16.00	2.75	1.0	0
1\15	3.5	0.5	0.5	0
1\16	1.6	4.25	1.8	1
1\17	n.a.	1.5	0.0	0
1\18	9	0	0.5	0.25
1\19	11.5	1.5	0.0	0
1\20	n.a.	0.5	1.0	0
1\21	6.0	1.75	1.0	0
1\22	2.3	0	2.5	0
1\23	20.8	5.5	0.0	2
1\24	n.a.	1.75	1.3	1
1\25	n.a.	1.75	1.0	0.75
1\26	7.00	1.75	1.5	2.5
1\27	n.a.	1	1.0	1.25
1\28	9.50	1	0.5	0
1\29	9.00	2.5	7.0	1

n.a. - not available

Appendix 8a. Sediment production in kilograms from paired swales by storm in Upper Saloon Gulch.

Swale no.	Rain event			
	21-Jul-02	30-Aug-02	21-Sep-02	11-Oct-02
1\8	6945	0.0	101	7.8
1\9	4341	0.0	30.8	0.0
1\12	991	175	9.1	5.6
1\13	1293	78	6.4	0.0
1\14	1888	164	18.7	0.0
1\15	900	4.9	18.8	0.0
1\16	1502	52	16.9	0.0
1\17	1043	210	19.9	11
1\18	1811	0.0	92.6	8.4
1\19	1017	0.0	0.8	0.0
1\20	3616	0.0	3.2	6.0
1\21	3733	147	88.2	0.0
1\22	3083	0.0	5.9	0.0
1\23	5007	0.0	2.6	2.8
1\24	885	19	8.0	0.0
1\25	629	23.2	7.7	10
1\26	2164	50.3	285	4.2
1\27	2656	14.5	339	3.2
1\28	1551	0.0	2.7	0.0
1\29	1284	16.4	331	8.6

Appendix 8b. Sediment production in kilograms from paired swales in Trumbull.

Swale no.	24-July-01
2\2	1160
2\3	703
2\5	444
2\10*	17
2\23*	13

* Sediment collected from bare hillslopes on May 16, 2002.

APPENDIX 9.

**Particle-size data for the surface soils and sediment collected from
fences**

Appendix 9a. Particle-size distribution for the surface soils in the swales in Upper Saloon Gulch.

Swale no.	Position in the swale	Particle-size distribution (%)				Organic matter (%)
		Coarse	Sand	Silt	Clay	
1\8	Upper	59.57	32.30	7.55	0.59	1.98
	Channel	57.02	32.92	9.17	0.89	2.64
	Lower	48.93	36.21	14.01	0.84	2.96
1\9	Upper	51.28	36.33	11.86	0.53	2.10
	Channel	47.49	45.38	6.66	0.48	1.93
	Lower	53.37	37.93	8.26	0.44	2.24
1\12	Upper	40.66	43.94	14.66	0.74	3.02
	Channel	34.82	50.78	13.60	0.80	2.34
	Lower	41.26	49.97	8.29	0.48	1.70
1\13	Upper	40.82	44.59	13.95	0.64	2.01
	Channel	41.21	44.95	13.10	0.75	3.11
	Lower	52.11	38.27	9.05	0.57	1.16
1\14	Upper	44.73	47.38	7.46	0.43	1.66
	Channel	44.25	49.37	5.78	0.60	1.31
	Lower	39.81	50.69	8.95	0.56	2.10
1\15	Upper	53.41	38.67	7.46	0.45	1.77
	Channel	50.11	38.35	10.92	0.62	3.81
	Lower	49.85	41.49	8.15	0.51	1.56
1\16	Upper	52.16	40.51	6.79	0.53	1.31
	Channel	45.19	47.69	6.57	0.56	1.26
	Lower	60.32	34.41	4.96	0.31	1.26
1\17	Upper	56.79	35.71	6.74	0.76	2.74
	Channel	53.83	35.44	9.74	0.99	1.53
	Lower	61.80	33.07	4.61	0.53	1.91
1\18	Upper	42.30	47.42	9.46	0.82	2.11
	Channel	52.95	37.94	8.21	0.90	2.15
	Lower	47.20	45.29	6.82	0.69	1.78
1\19	Upper	50.64	41.48	7.25	0.63	1.87
	Channel	48.11	42.01	8.92	0.96	1.79
	Lower	47.95	41.27	9.80	0.97	2.26
1\20	Upper	61.36	33.99	4.03	0.62	1.21
	Channel	74.28	22.29	2.99	0.44	1.41
	Lower	67.79	28.25	3.90	0.05	1.84
1\21	Upper	47.57	43.59	8.30	0.53	1.40
	Channel	55.42	39.98	4.28	0.32	1.37
	Lower	53.26	41.15	5.42	0.17	1.47
1\22	Upper	50.42	39.86	9.12	0.60	1.70
	Channel	47.85	41.87	9.55	0.73	1.74
	Lower	44.81	46.04	8.80	0.36	1.88
1\23	Upper	49.97	37.82	11.51	0.70	2.18
	Channel	66.39	25.33	7.78	0.50	2.07
	Lower	53.65	36.55	9.16	0.64	1.39

Appendix 9a. (continued).

Swale no.	Position in the swale	Particle-size distribution (%)				Organic matter (%)
		Coarse	Sand	Silt	Clay	
1\24	Upper	41.57	44.96	12.53	0.94	1.55
	Channel	44.16	45.80	9.06	0.98	2.37
	Lower	54.98	37.07	7.35	0.60	1.15
1\25	Upper	55.00	36.02	8.47	0.51	2.04
	Channel	60.28	33.17	6.16	0.39	1.33
	Lower	47.80	41.92	9.54	0.75	1.54
1\26	Upper	55.51	34.64	9.29	0.55	1.70
	Channel	55.59	36.11	7.78	0.53	1.61
	Lower	45.40	43.91	10.22	0.46	1.15
1\27	Upper	49.66	37.61	11.95	0.77	2.43
	Channel	50.33	36.79	12.08	0.80	2.55
	Lower	57.98	33.89	7.46	0.67	1.65
1\28	Upper	54.85	35.07	9.58	0.50	1.73
	Channel	48.70	40.34	10.29	0.68	1.82
	Lower	44.08	45.13	9.71	1.08	1.45
1\29	Upper	52.47	34.85	11.81	0.87	1.40
	Channel	34.39	43.81	20.98	0.82	2.56
	Lower	38.97	45.08	14.86	1.09	1.27

Appendix 9b. Particle-size distribution for the surface soils in the paired swales in Trumbull.

Swale no.	Position in the swale	Particle-size distribution (%)				Organic matter (%)
		Coarse	Sand	Silt	Clay	
2\1	Upper	48.83	46.15	5.03	0.00	1.22
	Middle	52.92	42.58	4.46	0.04	0.93
	Lower	56.97	38.62	4.20	0.20	0.73
2\2	Upper	53.20	43.26	3.20	0.34	1.94
	Middle	52.73	42.51	4.54	0.22	1.40
	Lower	51.41	43.81	4.56	0.23	1.86
2\3	Upper	53.57	41.21	4.92	0.31	1.84
	Middle	51.04	43.46	5.30	0.20	1.59
	Lower	43.27	51.19	5.32	0.22	1.60
2\4	Upper	42.02	52.88	4.88	0.22	1.67
	Middle	54.09	41.32	4.49	0.10	2.47
	Lower	53.39	41.92	4.47	0.23	1.25
2\5\1	Upper	56.32	38.30	5.22	0.17	1.13
	Middle	52.59	42.73	4.50	0.18	1.38
	Lower	60.48	36.61	2.54	0.36	1.75
2\11	Upper	51.59	42.78	5.20	0.43	2.02
	Middle	44.89	49.20	4.90	1.01	2.39
	Lower	52.58	42.65	4.35	0.42	2.68
2\12	Upper	36.63	57.00	6.01	0.36	2.60
	Middle	39.81	52.79	7.04	0.36	2.40
	Lower	52.30	42.88	4.41	0.41	1.39
2\13	Upper	30.46	59.80	8.87	0.86	2.89
	Middle	42.25	49.21	7.97	0.57	2.15
	Lower	44.38	48.70	6.63	0.29	3.40
2\14	Upper	47.41	43.96	8.33	0.30	2.63
	Middle	52.40	40.01	7.47	0.12	2.13
	Lower	43.79	48.07	7.93	0.21	3.08
2\15	Upper	41.70	47.54	10.03	0.73	2.62
	Middle	41.87	50.58	7.06	0.48	2.78
	Lower	43.40	49.78	6.53	0.29	1.90
2\16	Upper	43.17	48.01	8.65	0.17	2.37
	Middle	45.83	44.97	8.75	0.45	2.22
	Lower	55.11	39.86	4.54	0.48	2.41
2\17	Upper	40.47	52.32	6.64	0.58	2.88
	Middle	49.52	42.00	7.83	0.66	2.77
	Lower	51.03	39.09	9.28	0.61	3.07

Appendix 9b. (continued).

Swale no.	Position in the swale	Particle-size distribution (%)				Organic matter (%)
		Coarse	Sand	Silt	Clay	
2\19	Upper	57.69	36.50	5.52	0.28	1.56
	Middle	49.45	44.48	5.92	0.16	2.76
	Lower	51.06	43.30	5.55	0.08	1.75
2\20	Upper	47.44	43.69	8.35	0.52	1.48
	Middle	45.02	49.70	4.91	0.37	1.16
	Lower	52.43	42.06	5.45	0.07	-0.35
2\21	Upper	45.89	45.86	7.73	0.52	4.15
	Middle	45.91	47.61	5.97	0.51	3.97
	Lower	48.56	46.76	4.68	0.00	3.14
2\22	Upper	41.49	50.72	7.24	0.55	2.41
	Middle	39.81	49.39	10.60	0.19	2.93
	Lower	47.38	47.54	5.07	0.00	4.34

Appendix 9c. Particle-size distribution of sediment collected from swale fences on 14 May 2002.

Site	Swale no.	Particle-size distribution (%)				Organic matter (%)
		Coarse	Sand	Silt	Clay	
TRM	2\2	28.05	58.05	13.20	0.70	4.18
	2\3	44.91	47.67	7.09	0.33	2.10
	2\4	44.83	47.59	7.51	0.06	4.08
	2\5	27.83	61.17	10.51	0.49	3.51
	2\8	36.57	57.16	5.96	0.31	1.55
	2\9	23.20	72.32	4.08	0.41	1.14
	2\10	78.89	20.55	0.45	0.12	1.09
	2\23	76.50	22.90	0.47	0.12	2.14

Appendix 9c. Particle-size-distribution of sediment collected from the swale fences on 24 July 2002.

Site	Swale no.	Particle-size distribution (%)				Organic matter (%)
		Coarse	Sand	Silt	Clay	
USG	1\8 LS	49.39	46.34	3.72	0.55	9.00
	1\8 LS	55.15	40.77	3.54	0.54	8.82
	1\9 LS	46.94	48.22	4.39	0.45	1.23
	1\9 US	57.89	38.81	2.71	0.59	1.17
	1\9 LS	41.16	54.19	4.28	0.37	1.62
	1\12 S	44.15	46.61	7.92	1.32	11.16
	1\13 S	41.74	48.47	8.18	1.61	16.59
	1\14 S	46.82	43.12	8.37	1.68	19.36
	1\15 S	51.46	43.51	4.40	0.62	9.86
	1\15 D	13.58	51.25	30.79	4.39	39.52
	1\16 S	60.70	33.34	5.04	0.92	10.39
	1\17 S	49.03	43.09	6.34	1.55	9.79
	1\18 S	47.97	46.04	5.20	0.80	10.82
	1\19 D	4.06	47.03	42.17	6.73	30.92
	1\19 S	41.96	49.73	6.84	1.48	11.16
	1\20 LD	10.67	54.86	30.33	4.13	24.21
	1\20 US	66.29	29.78	3.54	0.38	9.30
	1\21 LS	42.22	32.06	23.03	2.70	16.76
	1\21 US	55.94	39.66	3.81	0.59	10.66
	1\24 LS	54.24	40.91	3.90	0.95	10.71
	1\24 US	56.95	40.82	1.94	0.29	9.03
	1\24 S	71.70	25.97	1.97	0.36	10.30
	1\25 S	50.34	42.28	6.30	1.08	17.35
	1\26 LD	24.38	57.75	15.10	2.77	20.49
	1\26 US	58.43	36.82	3.90	0.85	9.63
	1\27 LS	53.13	42.64	3.51	0.73	8.85
	1\27 US	61.98	33.57	3.81	0.64	10.33
	1\28 S	49.43	46.42	3.52	0.63	10.01
	1\29 S	55.76	39.61	3.78	0.85	9.98

Note: L - Lower fence U - Upper fence S - Sediment D - Duff and/or ash
 LS - Lower fence sediment US - Upper fence sediment LD - Lower fence duff

Appendix 9c. Particle-size-distribution of sediment collected from the swale fences on 30 August 2002.

Site	Swale no.	Particle-size distribution (%)				Organic matter (%)
		Coarse	Sand	Silt	Clay	
USG	1\4 WUSD	27.49	47.16	23.71	1.64	9.19
	1\4EUD	29.74	46.31	22.23	1.72	8.28
	1\12 D	18.64	35.14	42.74	3.48	11.84
	1\12 S	40.73	48.34	9.65	1.28	2.54
	1\13 D	10.70	41.63	44.59	3.07	15.47
	1\13 S	41.90	41.09	15.89	1.12	4.68
	1\14 D	3.75	48.74	45.52	1.99	15.48
	1\14 S	49.34	46.07	4.15	0.44	1.88
	1\15 D	4.79	44.13	49.56	1.52	17.78
	1\16 UD	15.15	44.10	39.65	1.09	16.71
	1\16 US	40.66	47.96	10.92	0.46	4.30
	1\17 LD	8.72	30.85	57.93	2.50	11.95
	1\17 UD	19.75	47.97	31.09	1.19	10.75
	1\17 US	46.35	47.37	5.70	0.58	1.93
	1\18 UD	22.26	38.52	37.43	1.79	15.35
	1\21 MD	9.53	32.15	55.79	2.53	12.91
	1\21 UD	3.47	41.15	53.53	1.86	17.40
	1\21 US	45.02	52.66	2.07	0.25	0.71
	1\23 UD	5.94	30.06	60.78	3.21	24.38
	1\24 D	18.90	47.13	32.76	1.21	18.78
	1\24 S	48.03	41.19	10.09	0.69	5.20
	1\25 D	19.72	38.18	40.10	2.01	21.57
	1\25 S	37.95	52.17	9.33	0.55	4.71
	1\26 UD	23.51	38.85	36.20	1.45	19.19
	1\26 US	55.12	36.06	8.43	0.39	3.47
	1\27 UD	17.31	40.08	40.74	1.87	21.42
	1\27 US	54.79	30.86	13.65	0.69	4.88
	1\29 UD	9.86	42.80	45.11	2.23	21.66
	1\30 UD	17.84	35.61	43.57	2.97	23.44
	1\31 UD	8.28	41.33	47.07	3.32	32.60
	1\32 UD	17.90	41.61	37.73	2.76	24.78

Note: L - Lower fence U - Upper fence M - Middle fence
S - Sediment D - Duff and/or ash
W - West E - East

Appendix 9c. (continued).

Site	Swale no.	Particle-size distribution (%)				Organic matter (%)
		Coarse	Sand	Silt	Clay	
USG	1\4 EU	10.85	51.17	42.73	0.00	26.91
	1\4 EL	15.86	60.07	21.82	0.41	32.13
	1\4 WU	19.86	60.66	20.98	0.00	11.97
	1\4 WL	17.33	59.42	20.68	0.00	16.05
	1\8 M	59.01	37.53	3.13	0.34	1.43
	1\8 MD	4.93	60.40	47.67	0.00	27.76
	1\8 U	49.34	41.82	8.64	0.20	2.18
	1\8 L	23.98	26.76	18.36	0.00	21.08
	1\9 U	23.37	18.85	31.11	0.00	23.15
	1\9 M	39.28	36.51	24.21	0.00	15.72
	1\9 L	22.58	33.71	43.72	0.00	25.37
	1\12	29.37	58.04	11.90	0.68	3.89
	1\13	23.60	51.68	23.99	0.73	9.13
	1\14	23.61	70.22	23.77	1.07	9.55
	1\14	55.74	37.61	6.42	0.22	2.83
	1\15	66.26	26.94	6.36	0.44	2.46
	1\16 L	34.39	48.78	16.53	0.30	5.35
	1\16 U	35.96	57.52	6.34	0.17	3.58
	1\17 U	43.20	52.12	2.76	1.92	2.01
	1\18 S	44.52	45.55	9.93	0.00	3.32
	1\18 D	6.86	44.09	45.24	0.00	13.42
	1\19	30.42	35.29	19.03	0.00	7.56
	1\20 L	15.62	53.68	26.28	0.00	16.57
	1\20 U	21.26	84.68	16.56	0.00	4.09
	1\21 U	29.24	66.17	4.19	0.41	1.89
	1\21 UD	11.29	37.20	44.94	0.00	20.28
	1\21 L	14.61	53.19	31.75	0.00	10.80
	1\22 U	26.31	44.05	27.17	0.00	23.40
	1\22 M	21.65	51.03	25.10	0.00	9.85
	1\22 L	46.89	48.35	9.42	0.00	6.91
	1\23 U	12.51	47.36	20.76	2.25	19.84
	1\23 M	33.33	55.52	18.45	0.00	6.58
	1\23 L	11.53	44.24	37.34	0.00	12.50
	1\24	21.93	58.93	24.44	0.00	9.12
	1\26 US	50.23	40.12	9.24	0.40	3.69
	1\26 UD	18.37	44.06	35.12	0.40	19.39
	1\26 LD	22.50	48.94	26.03	0.43	10.57
	1\26 LS	51.30	37.35	11.35	0.00	4.34

Note: L - Lower fence U - Upper fence M - Middle fence
S - Sediment D - Duff and/or ash E - East
W - West

Appendix 9c. (continued).

Site	Swale no.	Particle-size distribution (%)				Organic matter (%)
		Coarse	Sand	Silt	Clay	
USG	1\27 UD	4.1	69.3	43.7	0.2	20.5
	1\27 MS	43.3	35.4	21.3	0.0	6.8
	1\27 L	8.2	51.9	58.5	0.2	11.9
	1\28 L	15.4	66.8	19.1	0.0	3.9
	1\28 L	44.2	35.1	9.6	0.2	4.8
	1\29 UD	10.0	51.4	35.4	0.0	15.4
	1\29 US	39.6	47.7	12.6	0.1	3.3
	1\29 L	33.6	60.2	6.0	0.3	2.3
	1\29 L	23.0	46.3	35.1	0.0	7.3
	1\30 UD	2.8	58.7	53.5	0.0	24.7
	1\30 US	45.0	42.4	12.6	0.0	5.5
	1\30 L	20.3	52.0	21.6	0.0	25.2
	1\31 UD	13.1	61.9	36.4	0.0	28.8
	1\31 US	43.9	41.5	14.7	0.0	7.4
	1\31 L	20.5	36.7	43.4	1.9	21.2
	1\32 U	17.9	49.8	30.8	0.0	19.7
	1\32 L	38.2	53.2	10.3	0.0	27.2
	1\33 U	19.9	57.1	13.9	1.4	9.1
	1\33 L	20.5	40.4	9.9	0.0	25.6

Note: L - Lower fence
S - Sediment
W - West

U - Upper fence
D - Duff and/or ash

M - Middle fence
E - East

Appendix 9 c. Particle-size distribution of sediment collected from the swale fences on 11 October 2002.

Site	Swale no	Particle-size distribution (%)				Organic matter %
		Coarse	Sand	Silt	Clay	
USG	1\8	8.62	45.06	45.41	0.92	27.53
	1\20	21.54	48.10	26.83	3.53	12.50
	1\25	33.12	48.69	16.95	1.23	7.71
	1\29	48.16	44.79	6.52	0.52	2.92
	1\30	30.89	49.29	18.05	1.77	19.68

Note: L - Lower fence U - Upper fence M - Middle fence
S - Sediment D - Duff and/or ash E - East
W - West

APPENDIX 10

**Survey information for the road segments in upper Saloon Gulch,
Trumbull and Spring Creek**

Appendix 10a. Survey information for the road segments in USG. The first segment was before the gate, and segment 1 began at the gate.

Seg. no.	Hillslope position	Active road surface	Traffic	Road drainage	Inside ditch	Cutslope height (m)	Length (m)	Slope (%)	Active width (m)	Total width (m)	rill depth
0\1	Ridgetop (<100m)	Bare	Light	Crowned	No	0.5	57.2	10	3.9	7.2	Med.
1	Ridgetop (<100m)	Well vegetated (40%)	Light	Outslope	No	0.9	119.6	5	2.1	5.8	Shall.
2	Ridgetop (<100m)	Partly vegetated (<15%)	Light	Outslope	No	0.25	24.9	4	2.3	4.8	
3	Ridgetop (<100m)	Partly vegetated (<15%)	Light	Planar	No	0.3	25.3	1	2.3	5.3	
4	Ridgetop (<100m)	Partly vegetated (<15%)	Light	Planar	No	0.5	34.1	4	2.4	5.5	
5	Ridgetop (<100m)	Well vegetated (>15%)	Light	Outslope	No		22.1	3	2.5	3.7	
6	Ridgetop (<100m)	Well vegetated (>15%)	Light	Inslope	No	0.8	69.5	5	2.3	6.1	Shall.
7	Ridgetop (<100m)	Partly vegetated (<15%)	Light	Planar	No	1.7	99.4	5	2.3	7.7	Shall.
8	Ridgetop (<100m)	Well vegetated (>15%)	Light	Planar	No		338.7	6	2.3	3.1	Med.
9	Ridgetop (<100m)	Well vegetated (>15%)	Light	Outslope	No	0.7	157	5	2.3	6.3	Shall.
10	Ridgetop (<100m)	Partly vegetated (<15%)	Light	Planar	No		55	2	2.6	5.4	
11	Ridgetop (<100m)	Well vegetated (>15%)	Light	Planar	No		57	2	2.2	5.1	
12	Ridgetop (<100m)	Well vegetated (>15%)	Light	Outslope	No		219	8	2.2	4.3	Med.
13	Ridgetop (<100m)	Well vegetated (30%)	Light	Planar	Yes		49.2	5	2.2	5	
14	Ridgetop (<100m)	Well vegetated (>15%)	Light	Outslope	No	0.6	107.7	1	2.3	6.2	
15	Ridgetop (<100m)	Well vegetated (>15%)	Light	Planar	No	0.35	120.7	4	1.9	5.2	
16	Ridgetop (<100m)	Partly vegetated (<15%)	Light	Planar	No	0.6	21	2	2	6.1	
17	Ridgetop (<100m)	Well vegetated (>15%)	Light	Outslope	No		87.5	5	2.2	4.9	
18	Ridgetop (<100m)	Well vegetated (>15%)	Light	Outslope	No		34.9	4	2.1	4.2	
19	Ridgetop (<100m)	Partly vegetated (<15%)	Light	Inslope	Yes	0.5	75	10	2	7.1	
20	Ridgetop (<100m)	Well vegetated (>15%)	Light	Outslope/Planar	No	0.4	119.6	10	2.3	6.3	Shall.

Appendix 10a. (continued).

Seg. no.	Drainage	Sediment plume			Rills below outlet					Hillslope gradient		Note
		Length	Slope	Roughness	Length	Slope	Width	Depth	Connect.			
		(m)	(%)		(m)	(%)	(m)	(m)	class	Below road	Above road	
0\1	None	65.5	13	Medium	59.6	13	0.42	0.16	4	6	28	Both sloping towards the road, SF # 1/11
1	Culvert									14	16	Start 1st km
2	None									18	11	
3	None									15	17	
4	None									13	21	
5	Culvert									11	13	
6	Culvert									21	17	
7	Culvert									23	21	
8	Culvert									4	2	
9	Culvert									18	17	
10	None									10	7	
11	None									10	5	
12	None	29.6	17	High					4	4	1	SF # 1/7
13	None									8	11	Start 2nd km
14	None									22	25	
15	None									15	12	
16	None									13	6	
17	None									13	4	
18	None									7	2	
19	Culvert	18.2	20	High					2	1	6	
20	Culvert	8.1	24	Medium					2	17	15	

Appendix 10a. (continued).

Seg. no.	Hillslope position	Active road surface	Traffic	Road drainage	Inside ditch	Cutslope height (m)	Length (m)	Slope (%)	Active width (m)	Total width m)	rill depth
21	Ridgetop (<100m)	Partly vegetated (<15%)	Light	Inslope	Yes	0.8	82.5	11	2.2	7.4	Deep
22	Ridgetop (<100m)	Well vegetated (>15%)	Light	Outslope	No	0.6	226.1	8	2.2	6.9	Med.
23	Ridgetop (<100m)	Partly vegetated (<15%)	Light	Outslope	No	0.9	52.9	9	2.3	6.5	Shall.
24	Ridgetop (<100m)	Well vegetated (>15%)	Light	Outslope	No	0.5	52.9	9	2.2	6.5	
25	Ridgetop (<100m)	Well vegetated (>15%)	Light	Outslope	No	0.3	176	4	2	4.8	
26	Ridgetop (<100m)	Well vegetated (>15%)	Light	Outslope	No	0.3	56	1	2.3	6	
27	Ridgetop (<100m)	Partly vegetated (<15%)	Light	Outslope	No	0.4	16.7	3	2.1	5.1	
28	Ridgetop (<100m)	Well vegetated (>15%)	Light	Outslope	No	0.4	16	1	2.1	5.1	
29	Ridgetop (<100m)	Well vegetated (>15%)	Light	Outslope/Planar	No		389.9	9	2.4	4.6	
30	Ridgetop (<100m)	Partly vegetated (<15%)	Light	Outslope	No	1.2	5.9	2	2	5.9	
31	Ridgetop (<100m)	Partly vegetated (<15%)	Light	Outslope	No		25.4	7	2.2	3.7	Shall.
32	Ridgetop (<100m)	Partly vegetated (<15%)	Light	Outslope	No	1.1	16.6	1	1.95	6.5	
33	Ridgetop (<100m)	Partly vegetated (<15%)	Light	Outslope	No	0.5	88.7	10	2.1	5.2	Shall.
34	Midslope	Partly vegetated (<15%)	Light	Inslope	No	0.6	42.4	11	2.1	5.2	Shall.
35	Ridgetop (<100m)	Partly vegetated (<15%)	Light	Outslope	No	1.1	27.5	1	2.1	5.5	
36	Ridgetop (<100m)	Partly vegetated (<15%)	Light	Outslope	No	0.85	30.1	7	2.1	5.3	Shall.
37	Midslope	Partly vegetated (<15%)	Light	Outslope	No	1	19.1	1	2	6.9	
38	Ridgetop (<100m)	Partly vegetated (<15%)	Light	Outslope	No	0.7	124.7	10	1.9	5.5	Shall.
39	Ridgetop (<100m)	Partly vegetated (<15%)	Moderate	Planar	Yes	1.95	53	7	2.2	6	
40	Ridgetop (<100m)	Partly vegetated (<15%)	Moderate	Planar	No	1.64	13	6	2.3	5.8	

Appendix 10a. (continued).

Appendix Four (continued).

Seg. no.	Drainage	Sediment plume			Rills below outlet					Hillslope gradient		Note
		Length (m)	Slope (%)	Roughness	Length (m)	Slope (%)	Width (m)	Depth (m)	Connect. class	Hillslope gradient		
										Below road	Above road	
21	Culvert	44.1	23	High					4	16	15	SF # 1/5
22	Culvert	15.1	17	Medium					4	21	15	End 2nd km
23	Culvert	14.2	35	Medium					4	31	20	SF # 1/2
24	None									16	15	SF # 1/1
25	None									13	7	Start 3rd km
26	None									13	9	
27	None									14	10	
28	None									14	10	
29	None									14	15	
30	None									29	31	
31	None									21	22	
32	None									23	18	
33	Pushout	51.6	14	Medium	30.6	15	0.3	0.07	4	20	24	
34	None	12.9	18	Medium					4	24	21	
35	None									32	21	
36	None	21	18	High	6	25	0.26	0.06	4	13	12	
37	None									23	16	
38	None	33.4	21	High					4	11	20	End 3rd km
39	None									37	25	Start of 4th km.
40	None									35	27	

Appendix 10a. (continued).

Seg. no.	Hillslope position	Active road surface	Traffic	Road drainage	Inside ditch	Cutslope height (m)	Length (m)	Slope (%)	Active width (m)	Total width (m)	rill depth
41	Ridgetop (<100m)	Partly vegetated (<15%)	Moderate	Outslope	Yes	0.5	12	5	2	7.4	
42	Ridgetop (<100m)	Partly vegetated (<15%)	Moderate	Outslope	No	1	52	10	1.9	3.8	
43	Ridgetop (<100m)	Partly vegetated (<15%)	Moderate	Planar	No	0.8	108.8	10	1.8	3.5	Shall.
44	Ridgetop (<100m)	Bare	Moderate	Planar	No	0.85	26	4	2.04	6.9	
45	Ridgetop (<100m)	Partly vegetated (<15%)	Moderate	Outslope	No	1.1	138	6	2.16	7.4	Shall.
46	Ridgetop (<100m)	Partly vegetated (<15%)	Moderate	Inslope	Yes	1.75	87	12	2.02	7.7	Shall.
47	Midslope	Bare	Moderate	Inslope	Yes	2.3	71.3	12	3	10.25	Shall.
48	Midslope	Partly vegetated (<15%)	Moderate	Planar	No	1.65	20.1	4	2.28	8.17	
49	Ridgetop (<100m)	Partly vegetated (<15%)	Moderate	Outslope	No	0.98	130	10	2.3	7.2	Med.
50	Ridgetop (<100m)	Partly vegetated (<10%)	Moderate	Outslope	No	1.1	110	10	2.19	6.7	Shall.
51	Ridgetop (<100m)	Partly vegetated (<15%)	Moderate	Crowned	No		92	4	2.7	4.2	
52	Ridgetop (<100m)	Partly vegetated (<15%)	Moderate	Crowned	No		251	5	2.44	5.21	Shall.
53	Ridgetop (<100m)	Partly vegetated (<5%)	Moderate	Crowned			126	2	2.4	4.5	
54	Ridgetop (<100m)	Partly vegetated (<10%)	Moderate	Crowned	No		107	7	2.43	8.6	Shall.
55	Ridgetop (<100m)	Bare	Moderate	Crowned	No		121	8	2.4	7.8	
56	Ridgetop (<100m)	Partly vegetated (<5%)	Moderate	Planar	No		133	8	2.9	6.9	Shall.
57	Ridgetop (<100m)	Partly vegetated (<15%)	Moderate	Planar	No		144	8	2	7.65	
58	Ridgetop (<100m)	Partly vegetated (<15%)	Moderate	Planar	No		16	4	2.4	5.5	
59	Ridgetop (<100m)	Partly vegetated (<10%)	Moderate	Planar	No		36	4	2.3	4.9	
60	Ridgetop (<100m)	Partly vegetated (<10%)	Moderate	Planar	No		56	6	2.2	5.9	

Appendix 10a. (continued).

Seg. no.	Drainage	Sediment plume			Rills below outlet					Hillslope gradient		Note
		Length	Slope	Roughness	Length	Slope	Width	Depth	Connect.			
		(m)	(%)		(m)	(%)	(m)	(m)	class	Below road	Above road	
41	None									18	17	Shared with # 1/47 Plume at 45m distance Plume at the end of the segment 85m distance Secondary road at the end of the segment
42	Culvert	44	29	Hight					3	37	26	
43	Culvert									19	8	
44	None									30	15	
45	Culvert	22	30	Medium	22	30	0.26	0.34	3	30	19	
46	Culvert	12	35	Low					2	38	23	
47	Culvert									20	22	
48	Culvert									42	27	
49	Culvert	27	36	Low	27	36	0.32	0.92	4	35	23	
		44	31	Low	44	31	0.22	0.1	4			
50	Culvert									36	21	
51	None									12	3	
52	None									5	10	
53	None									3	4	
54	None	12	7	Low					2	3	4	
55	Culvert	29	18	Medium					3	24	16	
		16	20	Medium					2			
56	None	16	9	Medium					2	8	6	
57	None									11	9	
58	None									9	8	
59	None									9	8	

Appendix 10a. (continued).

Seg. no.	Hillslope position	Active road surface	Traffic	Road drainage	Inside ditch	Cutslope height (m)	Length (m)	Slope (%)	Active width (m)	Total width (m)	rill depth
61	Ridgetop (<100m)	Partly vegetated (<15%)	Moderate	Outslope	No		35	3	2.6	7.8	
62	Ridgetop (<100m)	Partly vegetated (<15%)	Moderate	Planar	No		29	5	2.3	6.8	Deep
63	Ridgetop (<100m)	Bare	Moderate	Planar	No	0.95	23	4	2.1	7.4	
64	Ridgetop (<100m)	Bare	Moderate	Planar	No	0.7	98	12	2.15	6	Shall.
65	Ridgetop (<100m)	Partly vegetated (<15%)	Moderate	Outslope	No	0.7	24	7	2.3	5.9	Shall.
66	Ridgetop (<100m)	Partly vegetated (<10%)	Moderate	Planar	No	1	10	3	1.9	6.2	
67	Ridgetop (<100m)	Partly vegetated (<10%)	Moderate	Planar	No	0.76	10	4	2.2	6	Shall.
68	Ridgetop (<100m)	Partly vegetated (<5%)	Moderate	Planar	No	0.8	14	4	2.2	6.4	
69	Ridgetop (<100m)	Partly vegetated (<15%)	Moderate	Outslope	No	1.1	22	6	2	7	
70	Ridgetop (<100m)	Partly vegetated (<10%)		Outslope	No	0.9	70	11	2.2	7.6	Shall.
71	Midslope	Partly vegetated (<15%)	Moderate	Planar	No	0.75	90	2	2.13	6.9	

Appendix 10a. (continued).

Seg. no.	Drainage	Sediment plume			Rills below outlet					Hillslope gradient		Note
		Length (m)	Slope (%)	Roughness	Length (m)	Slope (%)	Width (m)	Depth (m)	Connect. class	Hillslope gradient		
										Below road	Above road	
60	None									15	16	Rills present, but area above road burned
61	None									28	26	
62	None	22	23	Medium	15	22	0.29	0.17	4	23	22	
63	None	Shared with 63								24	23	
64	None									26	19	
65	None									29	25	
66	None									24	28	
67	None									24	28	
68	None									33	30	
69	None				75	27	0.3	0.055		28	35	
70	None									24	25	
71	None									20	24	

Appendix 10b. Survey information for the road segments in Trumbull.

Seg. no.	Hillslope position	Active road surface	Traffic	Road drainage	Inside ditch	Cutslope height (m)	Length (m)	Slope (%)	Active width (m)	Total width (m)	rill depth	Drainage
1	Vall. Bott.	Bare	Moderate	Outlope	No		134.6	11	2.6	3.5	Med.	None
2	Midslope	Bare	Moderate	Outlope	No	0.75	18.7	1	2.85	7.2		None
3	Vall. Bott.	Bare	Moderate	Outlope	No		34.3	5	2.85	4.9		None
4	Vall. Bott.	Bare	Moderate	Outlope	No		59.5	8	2.85	4	Shall.	Culvert
5	Midslope	Partly vegetated (<15%)	Moderate	Outlope	No		94.9	11	3.6	3.7	Shall.	Culvert
6	Midslope	Bare	Light	Inslope	No		413	10	2.3	3.9	Med.	None
7	Midslope	Bare	Light	Crowned	No		38.8	14	3.1	2.9	Shall.	None
8	Midslope	Partly vegetated (<15%)	Light	Crowned	No		6.5	3	3.1	2.9		None
9	Midslope	Bare	Light	Crowned	No		38.1	18	2.4	4.1	Shall.	None
10	Midslope	Bare	Light	Crowned	No		37.2	16	2.4	4		None
11	Midslope	Bare	Light	Crowned	No		47.8	15	2.1	3.2	Deep	None
12	Midslope	Partly vegetated (<15%)	Light	Crowned	No		210.8	18	2.5	4	Deep	None
12\1	Midslope			Plannar	No		52.3	18	2.4	4.3		Waterbar
12\2	Midslope			Plannar	No		59.3	12	2.1	3	Shall.	Waterbar
12\3	Midslope			Plannar	No		45.1	15	2.1	2.9		Waterbar
12\4	Midslope			Plannar	No		30	14	2.2	2.7	Shall.	None

Appendix 10b. (continued).

	Sediment plume			Rills below outlet					Hillslope gradient		
Seg.	Length	Slope		Length	Slope	Width	Depth	Connect.			
no.	(m)	(%)	Roughness	(m)	(%)	(m)	(m)	class	Below road	Above road	
1									7	7	Shared with # 5
2	37.2	19	Low	23.3	21	0.28	0.09	4	22	12	
3	Shared with # 2							4	13	17	
4									39	28	
5									4	15	
6	120	10	Medium	100	10	0.5	0.08	4	6	15	Road full of sediment.
7									33	37	Both slopes drop off on both sides of the road
8	9.7	22	Low					2	24	38	Both slopes drop off on both sides of the road
9	Shared with # 8							2	31	31	Both slopes drop off on both sides of the road
10	29	25	Low	29	25	0.32	0.06	4	39	34	SF # 2/9 Slopes drop off on both sides of the road
11	20.5	38	Low	20.5	38	0.55	0.12	4	27	37	SF # 2/8 Slopes drop off on both sides of the road
12	14.9	3	Low	14.9	23	0.59	0.24	4	34	23	SF # 2/7 Slopes drop off on both sides of the road
12\1									34	23	Segment 12 divided into 4 segments in 2002 (SF # 2/24)
12\2									33	23	Segment 12 divided into 4 segments in 2002 (SF # 2/25)
12\3									32	21	Segment 12 divided into 4 segments in 2002 (SF # 2/26)
12\4									34	25	Segment 12 divided into 4 segments in 2002 (SF # 2/27)

Appendix 10c. Survey information for the road segments in Spring Creek.

Seg. no.	Hillslope position	Active road surface	Traffic	Road drainage	Inside ditch	Cutslope height (m)	Length (m)	Slope (%)	Active width (m)	Total width (m)	rill depth	Drainage
1	Ridgetop	Bare	Light	Inslope	No	0.55	31.6	8	3.4	7.3		Waterbar
2	Ridgetop	Partly vegetated (<15%)	Light	Plannar	No		25.1	6	3	4.9		Waterbar
3	Ridgetop	Partly vegetated (10%)	Light	Outslope bermed	No	0.6	35.6	6	3.2	7.8		Waterbar
4	Ridgetop	Partly vegetated (5%)	Light	Outslope	No	0.3	44	3	2.9	5.6		Waterbar
5	Ridgetop	Partly vegetated (<15%)	Light	Outslope	No	0.5	47.5	1	2.6	6.2		None
6	Ridgetop	Partly vegetated (<5%)	Light	Inslope	No	0.9	22.1	6	3.1	7.3		Waterbar
7	Ridgetop	Partly vegetated (<15%)	Light	Outslope	No		40	6	3.6	6		None
8	Ridgetop	Partly vegetated (<15%)	Light	Outslope	No	0.7	41.5	1	3.1	7.5		None
9	Ridgetop	Partly vegetated (<15%)	Light	Outslope	No		18	3	2.9	5.9		None
10	Ridgetop	Partly vegetated (<15%)	Light	Outslope	No		50.3	1	3	52		None
11	Ridgetop	Partly vegetated (<15%)	Light	Plannar bermed on both sides	No	0.1	47	3	2.8	5.9		Pushout
12	Ridgetop	Partly vegetated (<15%)	Light	Inslope	No	0.5	84	5	2.7	6.9		Pushout
13	Ridgetop	Partly vegetated (<15%)	Light	Outslope bermed	No	0.6	43	4	2.9	6.6		Pushout
14	Ridgetop	Partly vegetated (<15%)	Light	Outslope	No		79	6	2.9	5.3		Pushout
15	Ridgetop	Partly vegetated (5%)	Light	Plannar	No		23.2	3	2.85	7		None
16	Ridgetop	Partly vegetated (<15%)	Light	Outslope	No		24.1	3	3	5.6		None
17	Ridgetop	Partly vegetated (<15%)	Light	Outslope	No	0.75	73.4	4	2.7	7.2		None
18	Ridgetop	Partly vegetated (<15%)	Light	Outslope	No	0.25	100.5	4	2.8	6.6		None
19	Ridgetop	Partly vegetated (<10%)	Light	Outslope bermed	No/Yes	0.4	73	3	2.9	7.5		Waterbar
20	Ridgetop	Partly vegetated (5%)	Light	Inslope	Yes	0.9	39.7	9	2.6	8.7		Pushout

Appendix 10c. (continued).

Seg. no.	Sediment plume			Rills below outlet					Hillslope gradient (%)		Note
	Length (m)	Slope (%)	Roughness	Length (m)	Slope (%)	Width (m)	Depth (m)	Connect. class	Hillslope gradient (%)		
									Below road	Above road	
1	16	14	Medium					2	12	5	Start 1st km SF # 3/10
2	24	10	Low	16.5	10	0.42	0.04	3	15	11	
3	18	8	Medium	5.5	8	0.58	0.03	2	12	11	
4	7	10	Low					2	8	13	
5									15	16	SF # 3/11
6	8.3	10	Low					2	10	16	
7									10	15	
8									10	10	
9	19.5	12	Medium					2	7	13	Shared with # 10
10									6	3	
11	9.6	9	High					2	10	1	
12	14	12	Medium					2	5	13	
13	29	14	Medium					3	8	10	
14	11		Low					2	10	13	
15	4	7	Medium					2	7	7	
16	Shared with # 15								6	7	
17	8.15	20	Medium	4.3	28	0.23	0.09	2	8	12	
18	Shared with # 17							2	6	9	
19	30.9	5	Medium					3	9	10	
20	18	8	Low	8	7	0.28	0.05	2	14	14	

Appendix 10c. (continued).

Seg. no.	Hillslope position	Active road surface	Traffic	Road drainage	Inside ditch	Cutslope height (m)	Length (m)	Slope (%)	Active width (m)	Total width (m)	rill depth	Drainage
21	Ridgetop	Partly vegetated (<15%)	Light	Outslope	No		15.6	4	2.85	5.4		None
22	Ridgetop	Partly vegetated (<15%)	Light	Outslope	No	0.3	18.2	1	2.98	6.5		None
23	Ridgetop	Partly vegetated (<15%)	Light	Outslope	No		27.7	3	2.6	6.1		None
24	Ridgetop	Partly vegetated (<15%)	Light	Outslope	Yes	0.7	27.5	1	2.6	6.9		None
25	Ridgetop	Well vegetated (30%)	Light	Outslope	Yes	0.9	87.1	6	2.85	6.95		Culvert
26	Ridgetop	Partly vegetated (<15%)	Light	Plannar	No		24	3	2.3	5.7		None
27	Ridgetop	Partly vegetated (<15%)	Light	Outslope	No	0.5	76.1	6	2.4	6.9		Culvert
28	Ridgetop	Partly vegetated (<15%)	Light	Outslope	No		14.6	2	2.2	5.3	0.3	Culvert
29	Ridgetop	Well vegetated (>15%)	Light	Outslope	No	0.3	56.9	5	2.35	5.6		None
30	Ridgetop	Well vegetated (>15%)	Light	Outslope	No		16.1	1	2.3	5.6		None
31	Ridgetop	Partly vegetated (10%)	Light	Outslope	No	0.9	46.9	6	2.2	7.65		Culvert
32	Ridgetop	Partly vegetated (<15%)	Light	Outslope	No	0.7	27.5	3	2.4	7.3		Culvert
33	Ridgetop	Partly vegetated (<15%)	Light	Outslope	No	0.9	92.6	5	2.4	8	Shallow	None
34	Ridgetop	Partly vegetated (<15%)	Light	Inslope	No	0.9	19.2	2	2.5	6.6		None
35	Ridgetop	Partly vegetated (<15%)	Light	Outslope	Yes	0.6	29.3	3	2.7	7.2		Culvert
36	Ridgetop	Partly vegetated (<15%)	Light	Plannar	No	0.3	65.1	3	3.1	6.5	Shallow	Culvert
37	Valley bottom	Partly vegetated (<15%)	Light	Plannar	No	0.8	77.4	2	2.5	7.5		Culvert
38	Valley bottom	Partly vegetated (<15%)	Light	Outslope	No	0.3	23.8	1	2.8	6.5		Culvert
39	Valley bottom	Well vegetated (>15%)	Light	Outslope	No	0.6	70.9	4	2.5	7.2		Culvert
40	Midslope	Partly vegetated (<15%)	Light	Plannar	No	0.6	44.9	1	2.6	7.5		Culvert

Appendix 10c. (continued).

Seg. no.	Sediment plume			Rills below outlet							Note
	Length (m)	Slope (%)	Roughness	Length (m)	Slope (%)	Width (m)	Depth (m)	Connect. class	Hillslope gradient (%)		
									Below road	Above road	
21									6	5	End 1st km
22									8	13	
23	2.3	17	Low					2	13	16	Start 2nd km
24									23	18	
25									23	25	
26									22	19	
27	7.6	15	Low	4.7	15	0.19	0.06	4	16	15	
28	Shared with # 27								16	21	
29	7	18	Medium					2	12	17	
30	Shared with # 29								20	25	
31	46.9			17.3	30	0.28	0.12	4	20	23	
32	Shared with # 31								25	20	
33	13.2	23	Medium	9.2	25	0.18	0.07	4	21	19	
34	Shared with # 33								15	18	
35									22	15	
36									13	12	
37	Culverts Shared with # 36								10	22	
38	16.5	9	High					4	8	14	
39	Shared with # 38								6	16	
40	4.1	6	Medium					2	18	21	

Appendix 10c. (continued).

Seg. no.	Hillslope position	Active road surface	Traffic	Road drainage	Inside ditch	Cutslope height (m)	Length (m)	Slope (%)	Active width (m)	Total width (m)	rill depth	Drainage
41	Ridgetop	Partly vegetated (<15%)	Light	Inslope	Yes	0.9	67.4	5	2.9	7.7		Culvert
42	Ridgetop	Well vegetated (>15%)	Light	Outslope	No	0.4	120.1	4	2.3	5.7		None
43	Ridgetop	Bare	Light	Plannar	No		118.9	6	2.5	6	Shallow	Waterbar
44	Ridgetop	Bare	Light	Plannar	Yes	0.4	104.9	10	3.7	7.2	Shallow	Waterbar
45	Ridgetop	Partly vegetated (<10%)	Light	Inslope	No	0.5	58.8	9	2.6	6.2	Shallow	Waterbar
46	Ridgetop	Partly vegetated (<15%)	Light	Plannar	No	0.4	49.7	6	2.2	5.4		Waterbar
47	Ridgetop	Partly vegetated (<15%)	Light	Plannar	No	0.4	50.9	5	2.4	6.5		None
48	Ridgetop	Partly vegetated (<15%)	Light	Outslope	No		31.8	2	2.1	5.6		Pushout
49	Ridgetop	Partly vegetated (<10%)	Light	Outslope	No		32.3	5	2.4	5.5		Pushout
50	Ridgetop	Well vegetated (>15%)	Light	Outslope	No		88.7	2	2.3	4.8		None
51	Ridgetop	Partly vegetated (<15%)	Light	Outslope	No		20.9	4	2.7	5	Shallow	None
52	Ridgetop	Partly vegetated (<15%)	Light	Outslope	No		15.2	2	2.2	5		None
53	Ridgetop	Partly vegetated (<15%)	Light	Outslope	No		12.3	2	2.4	5.5		None
54	Ridgetop	Partly vegetated (<15%)	Light	Outslope	No	0.7	24	2	2.5	7		None
55	Ridgetop	Bare	Light	Plannar	No	0.9	23	8	2	6.5	Shallow	Waterbar
56	Ridgetop	Partly vegetated (<15%)	Light	Outslope	No		59.9	6	2.5	5.4	Shallow	None
57	Ridgetop	Partly vegetated (<15%)	Light	Outslope	No		37.5	3	2.4	6.7		None
58	Ridgetop	Partly vegetated (<15%)	Light	Outslope	No		52.5	5	2.5	5.6	Shallow	Culvert
59	Ridgetop	Well vegetated (>15%)	Light	Outslope	No		92.4	6	2.3	5.1		Culvert
60	Ridgetop	Partly vegetated (<15%)	Light	Outslope	No	1	54.2	4	2.1	6.9	Shallow	None

Appendix 10c. (continued).

Seg. no	Sediment plume			Rills below outlet					Hillslope gradient (%)		Note
	Length (m)	Slope (%)	Roughness	Length (m)	Slope (%)	Width (m)	Depth (m)	Connect. class	Hillslope gradient (%)		
									Below road	Above road	
41	Shared with # 40								13	9	End 2nd km SF # 3/9 Start 3rd km SF # 3/7 SF # 3/6 SF # 3/8
42									12	15	
43	19.2	12	Medium					2	13	7	
44	96.5	9	Medium	77.9	9	0.6	0.12	4	5	2	
45	41.6	15	High	30.5	15	0.34	0.09	3	8	5	
46	41.4	13	High	37.4	13	0.39	0.05	3	9	6	
47	11	14	Medium					2	9	2	
48									11	8	
49									8	12	
50									11	12	
51									9	12	
52									12	10	
53									12	11	
54									12	11	
55	9.1	9	High					2	1	5	
56									5	14	
57									13	13	
58									9	9	
59	Shared with # 58								10	10	
60	6.2	24	High					2	13	17	

Appendix 10c. Continued.

Seg. no.	Hillslope position	Active road surface	Traffic	Road drainage	Inside ditch	Cutslope height (m)	Length (m)	Slope (%)	Active width (m)	Total width (m)	rill depth	Drainage
61	Ridgetop	Partly vegetated (<15%)	Light	Outslope	No	0.9	39.7	8	2.2	8.6	Shallow	Culvert
62	Ridgetop	Bare	Light	Outslope	No	1	16.7	1	2.5	8.2		None
63	Ridgetop	Partly vegetated (<15%)	Light	Outslope	No	1.6	56.6	7	2.5	9.4	Medium	Culvert
64	Ridgetop	Partly vegetated (<15%)	Light	Outslope	No		64.2	9	2.1	6.2		Pushout
65	Ridgetop	Partly vegetated (<15%)	Light	Outslope	No		54	9	2.7	7.2		Waterbar
66	Ridgetop	Well vegetated (>15%)	Light	Outslope	No	0.9	85	8	2.3	7		Waterbar
67	Ridgetop	Well vegetated (50%)	Light	Outslope	No	1.2	75.5	5	2.2	6.7		None
68	Ridgetop	Partly vegetated (<5%)	Light	Outslope	No		23.5	4	2.2	5.9		Pushout
69	Ridgetop	Partly vegetated (<15%)	Light	Inslope	No	1	73.5	10	2.4	6.8	Medium	Waterbar
70	Ridgetop	Partly vegetated (<15%)	Light	Planar bermed on both sides	No		46.6	10	3	6.4	Shallow	Waterbar
71	Ridgetop	Partly vegetated (<15%)	Light	Inslope	Yes	0.7	94.4	10	2.4	7.4	Medium	Culvert
72	Ridgetop	Partly vegetated (<15%)	Light	Outslope	No	1.5	23.5	3	2.3	6.9		Culvert
73	Ridgetop	Well vegetated (>15%)	Light	Outslope	No	1	111.6	9	2.3	6.2		Culvert
74	Ridgetop	Bare	Light	Planar	No		75.2	5	3	5.9	Shallow	None
75	Ridgetop	Partly vegetated (<15%)	Light	Planar	No	0.3	45.5	2	2.72	4.87		None
76	Ridgetop	Bare	Light	Crowned	No		92.2	5	2.95	5.25	Shallow	None
77	Ridgetop	Partly vegetated (<5%)	Light	Planar	No		40.3	2	2.89	5.9		None
78	Valley bottom	Bare	Light	Crowned	No		106.9	6	2.9	5.3	Shallow	Waterbar
79	Valley bottom	Bare	Light	Planar	No		74	8	3	5.6	Shallow	Pushout
80	Valley bottom	Partly vegetated (<10%)	Light	Crowned	No		92.8	9	2.63	7.4	Shallow	Culvert

Appendix 10c. (continued).

Appendix 10c (continued)											
Seg. no.	Sediment plume			Rills below outlet							Note
	Length (m)	Slope (%)	Roughness	Length (m)	Slope (%)	Width (m)	Depth (m)	Connect. class	Hillslope gradient (%)		
									Below road	Above road	
61	10	12	Medium					2	11	14	SF # 3/5 End 3rd km SF # 3/4 Start 4th km SF # 3/2 End of road State of 1st km 2002 Drains to SF # 3/15
62									14	15	
63	18.6	15	Medium	8.9	21	0.18	0.07	4	22	18	
64									21	8	
65	14.4	21	Low					2	19	22	
66	40	21	Medium	31.5	23	0.59	0.14	4	24	15	
67									21	36	
68									13	9	
69	13	30	Low	13	30	0.37	0.13	4	27	15	
70	28.9	26	Medium	28.9	26	0.6	0.18	4	10	21	
71									19	19	
72	Shared with # 71								24	29	
73									29	15	
74									2	6	
75									2	12	
76									2	8	
77									2	11	
78									11	10	
79									11	8	
80									20	3	

Appendix 10c. (continued).

Seg. no.	Hillslope position	Active road surface	Traffic	Road drainage	Inside ditch	Cutslope height (m)	Length (m)	Slope (%)	Active width (m)	Total width (m)	rill depth	Drainage
81	Ridgetop	Partly vegetated (<15%)	Light	Crowned	No		47.6	4	2.6	8.1		Culvert
82	Ridgetop	Partly vegetated (<15%)	Light	Crowned	No		10.6	3	2.7	8.2		None
83	Ridgetop	Partly vegetated (<15%)	Light	Crowned	Yes	0.8	57.8	2	2.75	6.5		None
84	Ridgetop	Partly vegetated (<10%)	Light	Crowned	No		13.5	2	2.8	6.6		None
85	Ridgetop	Partly vegetated (<15%)	Light	Outslope	No	0.74	21	2	2.5	6.9		None
86	Ridgetop	Partly vegetated (<15%)	Light	Crowned	No	0.75	9	1	2.5	7		None
87	Ridgetop	Partly vegetated (<15%)	Light	Inslope	Yes	1.2	94.1	9	2.7	8.6	Shallow	Waterbar
88	Ridgetop	Partly vegetated (<5%)	Light	Planar	No		191	11	2.8	7.27	Medium	None
89	Ridgetop	Partly vegetated (<15%)	Light	Planar	No		27.9	3	2.55	5		None
90	Ridgetop	Partly vegetated (<15%)	Light	Crowned	Yes	0.75	201	7	2.9	8.22		Culvert
91	Ridgetop	Partly vegetated (<15%)	Light	Outslope	No		34.2	3	2.6	4.7		None
92	Ridgetop	Bare	Light	Crowned	No	1.4	49.3	5	2.65	9.7		Culvert
93	Ridgetop	Partly vegetated (<15%)	Light	Planar	No		25	3	2.6	6		None
94	Ridgetop	Partly vegetated (<15%)	Light	Planar	No		48	3	2.5	6		None
95	Ridgetop	Bare	Light	Crowned	No		7.3	3	2.9	7		None
96	Ridgetop	Partly vegetated (<5%)	Light	Planar	No		72.6	9	2.6	6		None
97	Ridgetop	Partly vegetated (<5%)	Light	Planar	No		63.9	4	2.3	5.8	Shallow	Pushout
98	Ridgetop	Partly vegetated (<15%)	Light	Planar	No	0.42	71.9	9	2.6	5.8		Pushout
99	Ridgetop	Partly vegetated (<15%)	Light	Outslope	No		12	4	2.5	4.4		None
100	Ridgetop	Partly vegetated (<15%)	Light	Planar	No		90.4	4	2.3	5.9	Shallow	None

Appendix 10c. (continued).

Seg. no.	Sediment plume			Rills below outlet					Hillslope gradient (%)		Note
	Length (m)	Slope (%)	Roughness	Length (m)	Slope (%)	Width (m)	Depth (m)	Connect. class	Hillslope gradient (%)		
									Below road	Above road	
81									25	23	Shared with # 80
82									16	28	
83									16	18	
84									16	18	
85									27	19	
86									27	18	
87	34	17	High	21	17	0.21	0.074	3	17	28	
88									4	2	
89									13	16	
90									12	19	
91									13	13	
92	12	18	Medium					2	16	21	
93									15	15	
94									8	11	
95	14.5	3	Low					2	5	2	
96	sh w 95							sh w 95	9	4	
97	20.2	7	Medium					2	6	9	Both slopes down from the road
98	39.3	17	Medium	22.5	10	0.33	0.065	3	18	3	
99									13	2	
100									18	8	

Appendix 10c. (continued).

Seg. no.	Hillslope position	Active road surface	Traffic	Road drainage	Inside ditch	Cutslope height (m)	Length (m)	Slope (%)	Active width (m)	Total width (m)	rill depth	Drainage
101	Midslope	Partly vegetated (<15%)	Light	Planar	No		47.2	6	2.2	7		Pushout
102	Ridgetop	Bare	Light	Crowned	No		14.7	2	2.25	5.1		Pushout
103	Ridgetop	Partly vegetated (<15%)	Light	Crowned	No		27.4	3	2.5	5.4		Pushout
104	Ridgetop	Partly vegetated (<15%)	Light	Crowned	No		127.2	5	2.6	6.3	Shallow	None
105	Ridgetop	Partly vegetated (<15%)	Light	Outslope/Crowned	No	0.9	102.5	13	2.5	8.1	Medium	None
106	Ridgetop	Partly vegetated (<15%)	Light	Outslope/Crowned	No	1	20.4	3	2.4	9.2		None
107	Ridgetop	Partly vegetated (<15%)	Light	Planar	No	0.64	53.4	4	2.5	7.6		Pushout
108	Ridgetop	Partly vegetated (<15%)	Light	Planar	No		72.5	7	2.2	6		None
109	Ridgetop	Partly vegetated (<15%)	Light	Planar	No	0.32	21.6	3	2.4	5.9		None
110	Ridgetop	Partly vegetated (<15%)	Light	Planar	No	0.64	56	12	2.4	8.7		Pushout
111	Ridgetop	Partly vegetated (<15%)	Light	Planar	No		55.3	5	2.4	5.7		Pushout
112	Ridgetop	Partly vegetated (<15%)	Light	Planar	No	0.64	39.9	3	2.5	8.2		None
113	Ridgetop	Partly vegetated (<15%)	Light	Outslope	No	1.12	52.6	3	2.3	8.8		None
114	Ridgetop	Partly vegetated (<15%)	Light	Planar	No		126.6	6	2.1	7.1		None
115	Midslope	Partly vegetated (<15%)	Light	Outslope	No	1.53	157.9	4	2.3	9.8		Culvert
116	Ridgetop	Partly vegetated (<15%)	Light	Outslope	No	1.45	60.5	2	2.3	8		None
117	Ridgetop	Partly vegetated (<15%)	Light	Planar	No	1.2	130.5	3	2.1	8.7		Culvert
118	Ridgetop	Partly vegetated (<15%)	Light	Outslope	No	1.6	50.2	2	2.2	8.3		Culvert
119	Ridgetop	Bare	Light	Inslope	Yes	1	74	10	2.4	7.4	Shallow	Waterbar
120	Ridgetop	Partly vegetated (<5%)	Light	Outslope	No		22	4	2.85	6.9		None

Appendix 10 c. Continued.

Seg. no.	Sediment plume			Rills below outlet					Hillslope gradient (%)		Note
	Length	Slope	Roughness	Length	Slope	Width	Depth	Connect.			
	(m)	(%)		(m)	(%)	(m)	(m)	class	Below road	Above road	
101									7	6	Shared with # 102
102									6	9	
103									7	8	
104									7	8	
105	12.5	18	Medium	15	15	0.22	0.093	2	28	22	Both slopes down from the road
106									28	19	
107									23	18	
108									19	16	
109									19	7	
110	14.2	11	Medium					2	17	2	
111	sh w110							sh w110	13	13	
112	9.4	17						2	16	22	
113									25	17	
114									14	16	
115									33	23	
116									20	29	
117									23	23	Shared with # 118
118									27	48	
119									35	25	Drains to SF # 3/14
120									21	25	Drains to SF # 3/13

Appendix 11. Number of vehicles per day in Upper Saloon Gulch (USG), Spring Creek (SC), and Trumbull (TRM) from day of installation through 7 January 2003.

Site	Date of Installation	Date of download							
		11/19/01	1/25/02	5/14/02	7/1/02	7/29/02	8/31/02	11/13/02	1/7/03
USG	09/28/01	64	1326	138	394	192	347	658	17
SC by the gate	09/28/01	70	2250	72	378	27	216	261	3021
SC at the end of the road	07/03/02	n.a.	n.a.	n.a.	n.a.	10	23	38	391
TRM by the gate	09/28/01	200	156	253	301	64	125	416	128
TRM at the end of the road	06/04/02	n.a.	n.a.	n.a.	48	41	80	131	13

Site	Date of Installment	Date of download							
		11/19/01	1/25/02	5/14/02	7/1/02	7/29/02	8/31/02	11/13/02	1/7/03
USG	09/28/01	1.5	9.9	0.6	4.1	3.4	5.3	4.4	0.2
SC by the gate	09/28/01	1.7	16.8	0.3	3.9	0.5	3.3	1.8	28.0
SC at the end of the road	07/03/02	n.a.	n.a.	n.a.	n.a.	0.2	0.3	0.3	3.6
TRM by the gate	09/28/01	4.8	1.2	1.2	3.1	1.1	1.9	2.8	1.2
TRM at the end of the road	06/04/02	n.a.	n.a.	n.a.	0.9	0.7	1.2	0.9	0.1

Numbers in the above table are vehicles day⁻¹ assuming 2 axles per vehicle.

Appendix 12a. Particle-size distribution for the road surface of segments with fences.

Site	Sediment fence	Position on the road	Particle-size distribution (%)				Organic matter (%)
			Coarse	Sand	Silt	Clay	
USG	1\7	Upper	47	41	12	0	1
		Middle	44	45	10	0	1
		Lower	43	48	9	0	1
	1\11	Upper	28	62	9	1	1
		Middle	43	52	5	1	0
		Lower	37	54	9	1	0
TRM	2\7	Upper	56	40	4	1	1
		Middle	56	40	4	0	1
		Lower	43	51	6	1	1
	2\8	Upper	35	58	7	1	1
		Middle	47	47	5	1	1
		Lower	57	41	2	0	0
	2\9	Upper	64	33	3	0	1
		Middle	39	57	4	0	1
		Lower	40	55	4	0	1
	2\25	Upper	48	47	4	1	1
		Middle	35	56	8	1	3
		Lower	34	58	7	1	1
	2\26	Upper	41	47	11	1	2
		Middle	49	45	6	1	1
		Lower	42	51	7	1	2
	2\27	Upper	18	69	12	1	3
		Middle	26	55	15	3	2
		Lower	30	54	14	2	2
SC	3\2	Upper	37	54	9	0	1
		Middle	44	51	5	0	1
		Lower	50	44	5	0	1
	3\4	Upper	43	53	4	0	1
		Middle	40	54	6	0	1
		Lower	43	52	5	0	0
	3\5	Upper	43	47	10	1	1
		Middle	40	50	9	1	1
		Lower	40	48	12	1	1
	3\6	Upper	36	55	9	1	1
		Middle	39	55	6	1	1
		Lower	38	55	6	0	1
	3\7	Upper	34	55	11	1	1
		Middle	37	55	8	1	1
		Lower	35	58	7	1	1
	3\8	Upper	30	59	10	1	1
		Middle	34	58	8	1	0
		Lower	21	72	6	1	0

USG - Upper Saloon Gulch

TRM - Trumbull

SC - Spring Creek

Appendix 12a. (continued).

Site	Sediment fence	Position on the road	Particle-size distribution (%)				Organic matter (%)
			Coarse	Sand	Silt	Clay	
	3\9	Upper	33	57	9	1	1
		Middle	35	57	7	1	1
		Lower	26	65	9	1	1
	3\10	Upper	50	40	9	1	1
		Middle	47	44	8	1	1
		Lower	43	50	6	1	1
SC	3\11	Upper	51	41	7	1	1
		Middle	50	43	7	1	1
		Lower	52	41	6	1	1
	3\13	Upper	44	46	9	1	0
		Middle	50	44	6	1	1
		Lower	43	46	9	1	1
	3\14	Upper	25	62	12	1	1
		Middle	29	60	10	1	1
		Lower	39	52	9	0	1
	3\15	Upper	20	64	14	2	1
		Middle	21	63	15	1	2
		Lower	21	63	15	1	1

USG - Upper Saloon Gulch

TRM - Trumbull

SC - Spring Creek

Appendix 12b. Particle-size-distribution of sediment collected from road fences.

Sampling date	Site	Sediment fence no.	Particle size distribution (%)				Organic matter (%)
			Coarse	Sand	Silt	Clay	
23-Jul-01	TRM	2\8	55.4	41.9	2.0	0.8	2.7
		2\7	47.2	50.8	1.1	0.9	2.3
31-Aug-01	USG	1\11	43.2	48.8	6.9	1.6	7.1
	SC	3\9	27.7	45.8	24.1	2.3	9.2
		3\8	50.9	39.7	9.1	1.2	4.8
		3\7	46.8	42.1	9.9	1.8	3.6
		3\6	70.3	28.5	1.4	0.4	4.2
		3\5	45.2	41.3	11.4	1.5	5.3
		3\4	43.0	53.8	2.4	0.7	2.6
		3\2	68.0	31.7	0.2	0.2	1.7
4-Sep-01	USG	1\7	12.3	57.8	27.3	3.2	17.1
14-May-02	USG	1\11	11.0	73.7	14.7	0.6	0.6
		2\9	23.2	72.3	4.1	0.4	1.1
	SC	2\8	36.6	57.2	6.0	0.3	1.6
		3\11	21.3	35.5	41.2	2.0	4.9
		3\9	39.2	47.4	12.6	0.8	1.3
		3\8	33.9	48.6	16.8	0.7	3.2
		3\7	38.7	52.9	7.8	0.6	0.7
		3\6	38.1	31.5	29.5	0.8	4.0
		3\5	25.8	51.2	21.3	1.7	3.5
		3\4	31.3	65.4	3.0	0.3	0.3
		3\2	23.1	57.7	17.9	1.3	3.0
29-Jul-02	USG	1\11	22.2	48.6	27.4	1.8	1.8
		1\7	40.9	36.4	21.5	1.2	11.2
	SC	3\14	3.4	22.3	71.2	3.1	4.6
		3\11	38.3	48.6	12.3	0.8	1.9
		3\9	27.1	51.5	19.9	1.5	3.8
		3\8	40.7	47.2	11.5	0.8	3.2

USG - Upper Saloon Gulch

TRM - Trumbull

SC - Spring Creek

Appendix 12b. (continued).

Sampling date	Site	Sediment fence no.	Particle-size distribution (%)				Organic matter (%)
			Coarse	Sand	Silt	Clay	
31-Aug-02	USG	1\11 S	13.1	52.0	31.8	3.2	2.6
		1\7 US	43.5	40.3	15.0	1.2	1.9
		1\7 LS	4.3	12.8	78.9	4.1	11.8
	SC	3\13	42.1	42.3	14.2	1.4	3.0
		3\11	25.7	28.1	43.5	2.7	6.9
		3\10	28.3	42.5	26.1	3.1	4.8
		3\9	24.9	61.3	12.6	1.2	2.2
		3\8	43.9	45.8	9.4	0.9	3.0
11-Oct-02	USG	1\11	23.4	60.8	12.2	3.7	1.0
		1\7	22.8	59.4	15.6	2.1	2.7
	SC	3\14	8.4	41.5	47.0	3.0	1.9
		3\11	19.6	15.5	63.2	1.6	9.0
		3\10	37.3	30.3	30.4	2.0	3.8
		3\9	16.8	51.4	30.3	1.5	2.6
		3\8	34.3	54.7	10.7	0.3	1.8
		3\5	39.7	44.2	15.8	0.3	1.8
		3\2	8.4	43.9	46.3	1.4	5.6

USG - Upper Saloon Gulch

TRM - Trumbull

SC - Spring Creek

Appendix 13. Sediment production in kilograms from road fences in 2001 and 2002.

Site	Sediment Fence no.	Rain event						
		23-Jul-01	31-Aug-01	4-Sep-01	14-May-02	29-Jul-02	31-Aug-02	11-Oct-02
USG	1\11	0	652.5	0	132.7632	53.65	290.887	179.28203
USG	1\7	0	0	43.19	0	59.33	167.35	14.525
TRM	2\9*	0	0	0	45.21	0	0	0
TRM	2\8*	458	0	0	24.9	0	0	0
TRM	2\7*	1199	0	0	0	0	0	0
TRM	2\24	n.a.	n.a.	n.a.	n.a.	0	0	0
TRM	2\25	n.a.	n.a.	n.a.	n.a.	0	0	0
TRM	2\26	n.a.	n.a.	n.a.	n.a.	0	0	0
TRM	2\27	n.a.	n.a.	n.a.	n.a.	0	0	0
SC	3\15	n.a.	n.a.	n.a.	n.a.	3	0	0
SC	3\14	n.a.	n.a.	n.a.	n.a.	2.4	0	98.21
SC	3\13	n.a.	n.a.	n.a.	n.a.	0	11.7	0
SC	3\11	0	0	0	4.35	3.25	2.9	3.8
SC	3\10	0	0	0	80	0	11.2	14.8
SC	3\9	0	571.5	0	117	30.7	44.6	58.8
SC	3\8	0	1204.7	0	46.5	6.3	9.1	45.1
SC	3\7	0	580	0	82.4	0	0	0
SC	3\6	0	97	0	5.5	0	0	0
SC	3\5	0	180.7	0	3.9	0	0	18.8
SC	3\4	0	794.8	0	50.9	0	0	0
SC	3\2	0	749.9	0	8.5	0	0	3.9

* The regrading of the road at the end of May 2002 following the Schoonover fire changed the road drainage resulting in no sediment production from these fences.

n.a. - Not installed

USG - Upper Saloon Gulch TRM - Trumbull SC - Spring Creek

APPENDIX 14

**Water quality data for Saloon Gulch, Trumbull, Spring Creek, and
Brush Creek.**

Appendix 14a. Water quality data from Saloon Gulch.

Field measurements		Sampling date			
		23-Aug-01	27-Sep-01	25-Oct-01	30-Nov-01
pH		8.9	7.7	7.2	7.9
Temp-air	degreesC	20.0	20.7	9.0	1.1
Temp-water	degreesC	12.2	9.8	6.0	5.0
Conductivity	uS	195	210	150	195
Discharge	L/s	0.1	0.1	0.2	0.3
Laboratory analysis					
pH		7.6	8.4	7.8	7.9
ANC	uE/L	1312	1463	1387	1414
Conduct.	uS/cm	187	196	188	188
Na	mg/L	6.1	6.6	6.3	6.0
NH4	mg/L	b.d.	b.d.	b.d.	b.d.
K	mg/L	2.9	3.5	3.0	2.9
Mg	mg/L	4.2	4.5	4.5	4.4
Ca	mg/L	24.6	27.2	26.0	25.3
F	mg/L	2.7	3.1	2.9	3.0
Cl	mg/L	2.0	1.8	1.7	1.9
NO3	mg/L	0.2	0.8	0.4	0.6
PO4	mg/L	0.0	0.0	0.0	0.0
SO4	mg/L	17.5	17.6	17.1	18.0
ANC	ueq/L	1312	1463	1387	1414
pH	ueq/L	0.0	0.0	0.0	0.0
Ca	ueq/L	1226	1357	1297	1263
Mg	ueq/L	348	371	369	362
Na	ueq/L	263	287	274	263
K	ueq/L	74	89	77	73
NH4	ueq/L	b.d.	b.d.	b.d.	b.d.
F	ueq/L	142.7	163.0	152.4	158.7
Cl	ueq/L	57.5	49.8	48.1	54.0
NO3	ueq/L	3.5	12.7	6.6	9.2
SO4	ueq/L	364	366	356	375
ANC	ueq/L	1312	1463	1387	1414
SUM	ANIONS	1880	2055	1950	2011
SUM	CATIONS	1912	2104	2018	1961

Appendix 14a. (continued).

Field measurements		Sampling date			
		23-Aug-01	27-Sep-01	25-Oct-01	30-Nov-01
TOTAL	ION	3792	4160	3968	3972
%ION	DIFF	-0.9	-1.2	-1.7	1.3
SUM	BASES	1912	2104	2018	1961
SUM	ACIDS	425	429	411	438
DIFF=	ALK	1487	1676	1607	1523
ANC		1312	1463	1387	1414
FLAG	%ION	OK	OK	OK	OK
% COND	DIFF	-0.63	3.71	2.71	2.89
FLAG	% COND	OK	OK	OK	OK
THEOR.	COND	185.92	202.85	193.5	193.74
COMMENTS					
dry filter		1.3	1.3	1.4	1.3
filtered wgt		1.4	1.3	1.4	1.3
wgt sample	+flask	1009	1064	1054	1083
wgt flask		92	93	106	107
wgt sample		917	971	948	976
wgt solids		0.0	0.0	0.0	0.0
solids	mg/L	41.8	11.0	2.1	4.2
Turbidity		15.8	6.9	2.8	2.8

Appendix 14a. Water quality data from Saloon Gulch in 2002.

Field measurements	Sampling date					
	07-Jan-02	04-Feb-02	04-Mar-02	19-Apr-02	18-Jul-02	12-Aug-02
pH	7.9	8.4	8.3	7.0	7.3	
Temp-air degreesC	7.0	5.0	8.0	10.1	19.3	22.8
Temp-water degreesC	5.5	4.2	5.0	7.9		14.4
Conductivity uS	190.0	180.0	185.0	131.0	370.0	
Discharge L/s	0.3	0.3	0.3	0.2		0.6
Laboratory analysis						
pH	7.8	7.9	7.8	7.9	7.6	8.0
ANC uE/L	1264.8	1249.5	1190.7	1199.7	5380.3	2566.0
Conduct. uS/cm	179.1	171.7	170.8	166.9	516.0	302.0
Na mg/L	6.1	6.0	6.0	5.8	6.7	6.6
NH4 mg/L	0.0	0.0	0.0	0.0	0.5	0.0
K mg/L	2.9	2.8	2.8	2.8	8.6	4.8
Mg mg/L	4.3	4.2	4.1	4.0	15.9	7.4
Ca mg/L	24.6	24.5	24.0	22.9	77.9	41.4
F mg/L	2.9	3.1	3.1	3.2	1.2	2.7
Cl mg/L	1.8	1.8	1.8	1.8	3.0	2.1
NO3 mg/L	0.6	0.7	0.7	0.5	0.1	0.3
PO4 mg/L	0.0	0.1	0.0	0.0	0.3	0.4
SO4 mg/L	16.9	17.8	17.5	17.6	14.9	18.9
ANC ueq/L	1265	1250	1191	1200	5380	2566
pH ueq/L	0.0	0.0	0.0	0.0	0.0	0.0
Ca ueq/L	1228	1220	1196	1143	3885	2066
Mg ueq/L	350	346	341	326	1308	605
Na ueq/L	264	262	262	251	289	289
K ueq/L	73	73	72	71	219	123
NH4 ueq/L	0.0	0.0	0.0	0.0	30.4	0.0
F ueq/L	152	163	161	169	62	144
CL ueq/L	50	51	50	50	83	60
NO3 ueq/L	9.8	10.6	10.8	7.5	1.1	4.5
SO4 ueq/L	352	370	365	366	310	394
ANC ueq/L	1265	1250	1191	1200	5380	2566
SUM ANIONS	1829	1844	1778	1792	5837	3169
SUM CATIONS	1916	1901	1871	1791	5733	3083

Appendix 14a. (continued).

Field measurements		Sampling date					
		07-Jan-02	04-Feb-02	04-Mar-02	19-Apr-02	18-Jul-02	12-Aug-02
TOTAL	ION	3745	3745	3649	3583	11569	6252
%ION	DIFF	-2.3	-1.5	-2.6	0.1	0.9	1.4
SUM	BASES	1916	1901	1871	1791	5702	3083
SUM	ACIDS	412	431	426	424	395	459
DIFF=	ALK	1504	1470	1445	1367	5308	2624
ANC		1265	1250	1191	1200	5380	2566
FLAG	%ION	OK	OK	OK	OK	OK	OK
% COND	DIFF	2.2	6.6	4.5	4.6	8.2	0.5
FLAG	% COND	OK	OK	OK	OK	OK	OK
THEOR.	COND	183.1	183.0	178.5	174.7	558.2	303.4
COMME NTS							
dry filter		1.4	1.3	1.3	1.4	1.4	1.4
filtered wgt		1.4	1.3	1.3	1.4	1.4	1.4
wgt sample	+flask	1066	1106	1075	1067	1062	1064
wgt flask		107	105	107	106	105	105
wgt sample		959	1001	968	961	957	959
wgt solids		0.0	0.0	0.0	0.0	0.0	0.0
solids	mg/L	4.4	5.7	5.9	2.6	24.3	45.1
Turbidity		3.1	0.8	3.7	2.1	9.6	24.1

Appendix 14b. Water quality data from Trumbull.

Field measurements	Sampling date			
	23-Aug-01	26-Sep-01	25-Oct-01	30-Nov-01
pH	11.1	7.58	7.65	7.8
Temp-air degreesC	17.2	28.0	13.5	5.5
Temp-water degreesC	11.7	12.9	7.0	3.0
Conductivity uS	175	190	125	155
Discharge L/s	0.3	0.2	0.3	0.5
Laboratory analysis				
pH	7.6	8.1	7.7	7.7
ANC uE/L	826	990	837	804
Conduct. uS/cm	172	175	171	173
Na mg/L	5.5	6.0	5.6	5.3
NH4 mg/L	0	0	0	0
K mg/L	4.0	5.1	4.1	3.8
Mg mg/L	3.5	3.8	3.6	3.5
Ca mg/L	21.0	23.3	21.4	20.8
F mg/L	2.6	5.2	4.7	4.0
Cl mg/L	1.6	1.3	1.3	1.4
NO3 mg/L	0.1	0.5	0.0	0.1
PO4 mg/L	0.0	0.0	0.0	0.0
SO4 mg/L	20.1	26.0	25.7	26.8
ANC ueq/L	825.9	989.6	836.8	803.7
pH ueq/L	0.03	0.01	0.02	0.02
Ca ueq/L	1047	1160	1069	1039
Mg ueq/L	290	309	297	288
Na ueq/L	240	259	242	231
K ueq/L	102	131	105	97
NH4 ueq/L	0.000	0.000	0.000	0.000
F ueq/L	135.7	272.4	246.0	212.3
CL ueq/L	45.0	37.8	36.7	40.3
NO3 ueq/L	0.813	7.717	0.000	2.055
SO4 ueq/L	419	541	534	558
ANC ueq/L	826	990	837	804
SUM ANIONS	1426	1849	1654	1616
SUM CATIONS	1679	1860	1713	1655

Appendix 14b. (continued)

Field measurements		Sampling date			
		23-Aug-01	26-Sep-01	25-Oct-01	30-Nov-01
TOTAL	ION	3105	3709	3367	3272
%ION	DIFF	-8.2	-0.3	-1.8	-1.2
SUM	BASES	1679	1860	1713	1655
SUM	ACIDS	465	587	571	600
DIFF=	ALK	1215	1273	1142	1055
ANC		826	990	837	804
FLAG	%ION	OK	OK	OK	OK
% COND	DIFF	-9.03	3.76	-2.66	-5.54
FLAG	% COND	OK	OK	OK	OK
THEOR.	COND	156	182	166	164
COMMENTS					
dry filter		1.3	1.3	1.4	1.3
filtered wgt		1.3	1.3	1.4	1.3
wgt sample	+flask	1121	1088	1085	1078
wgt flask		107	93	107	106
wgt sample		1014	995	979	972
wgt solids		0.0151	0.0069	0.0095	0.0025
solids	mg/L	14.9	6.9	9.7	2.6
Turbidity		6.8	4.5	5.0	2.9

Appendix 14b. (continued).

Appendix 1 (continued)

Field measurements	Sampling date				
	07-Jan-02	04-Feb-02	04-Mar-02	19-Apr-02	19-Apr-02
pH	7.6	7.7	7.7	6.5	DUPLICATE
Temp-air degreesC	9.5	5.5	9.0	10.6	
Temp-water degreesC	2.5	0.5	0.1	8.5	
Conductivity uS	175	175	170	125	
Discharge L/s	0.3	0.6	0.5	0.6	
Laboratory analysis					
pH	7.6	7.7	7.5	7.3	7.6
ANC uE/L	768	736	720	752	777
Conduct. uS/cm	164	157	153	166	165
Na mg/L	5.3	5.2	5.2	5.5	5.5
NH4 mg/L	0	0	0	0	0
K mg/L	3.8	3.6	3.6	3.8	3.8
Mg mg/L	3.5	3.5	3.4	3.5	3.5
Ca mg/L	20.8	20.1	19.7	20.1	20.4
F mg/L	4.1	4.6	4.2	5.1	5.0
Cl mg/L	1.3	1.3	1.3	1.4	1.4
NO3 mg/L	0.2	0.2	0.3	0.0	0.0
PO4 mg/L	0.0	0.2	0.0	0.0	0.0
SO4 mg/L	26.0	27.0	26.2	28.4	28.2
ANC ueq/L	768	736	720	752	777
pH ueq/L	0.02	0.02	0.03	0.05	0.03
Ca ueq/L	1040	1001	981	1005	1020
Mg ueq/L	291	285	281	287	290
Na ueq/L	232	227	225	239	238
K ueq/L	97	93	92	98	98
NH4 ueq/L	0.000	0.000	0.000	0.000	0.000
F ueq/L	215	240	222	267	265
CL ueq/L	37.1	36.9	36.4	39.2	39.2
NO3 ueq/L	3.3	3.5	4.5	0.0	0.4
SO4 ueq/L	541	563	546	591	587
ANC ueq/L	768	736	720	752	777
SUM ANIONS	1564	1579	1529	1649	1668
SUM CATIONS	1659	1607	1580	1630	1646

Appendix 14b. (continued).

Field measurements		Sampling date				
		07-Jan-02	04-Feb-02	04-Mar-02	19-Apr-02	19-Apr-02
TOTAL	ION	3223	3186	3109	3278	3315
%ION	DIFF	-3.0	-0.9	-1.6	0.6	0.7
SUM	BASES	1659	1607	1580	1630	1646
SUM	ACIDS	581	603	586	630	627
DIFF=	ALK	1078	1004	993	1000	1019
ANC		768	736	720	752	777
FLAG	%ION	OK	OK	OK	OK	OK
% COND	DIFF	-1.79	0.81	1.25	-2.27	-0.70
FLAG	% COND	OK	OK	OK	OK	OK
THEOR.	COND	161	158	155	162	164
COMMENTS						
dry filter		1.3	1.3	1.3	1.4	1.4
filtered wgt		1.3	1.3	1.3	1.4	1.4
wgt sample	+flask	1072	1084	1071	1036	1036
wgt flask		107	106	108	106	106
wgt sample		965	978	964	930	930
wgt solids		0.0023	0.0017	0.0035	0.0162	0.0162
solids	mg/L	2.4	1.7	3.6	17.4	17.4
Turbidity		1.4	2.2	2.1	11.3	11.3

Appendix 14b. (continued).

Field measurements	Sampling date			
	12-Aug-02	13-Sep-02	28-Oct-02	03-Dec-02
pH	NA	NA	7.54	7.67
Temp-air degreesC	21.7	20.0	11	5
Temp-water degreesC	12.8	11.7	8.5	4.5
conductivity uS	NA	NA	187	180
Discharge L/s	low	low	0.1	0.2
Laboratory analysis				
pH	7.8	7.8	7.6	7.6
ANC uE/L	1053	1039	901	777
Conduct. uS/cm	309	263	182	174
Na mg/L	12.7	12.0	5.8	5.6
NH4 mg/L	0	0	0	0
K mg/L	4.6	5.0	4.1	3.7
Mg mg/L	4.8	4.9	4.2	3.9
Ca mg/L	35.8	35.6	23.1	21.2
F mg/L	5.0	5.2	4.6	4.5
Cl mg/L	7.1	15.1	1.4	1.4
NO3 mg/L	0.0	0.0	0.0	0.0
PO4 mg/L	0.0	0.0	0.0	0.0
SO4 mg/L	41.8	48.7	29.1	30.7
ANC ueq/L	1053	1039	901	777
pH ueq/L	0.02	0.01	0.03	0.02
Ca ueq/L	1785	1777	1155	1058
Mg ueq/L	399	399	345	317
Na ueq/L	552	521	254	241
K ueq/L	117	128	104	94
NH4 ueq/L	0.000	0.000	0.000	0.000
F ueq/L	261	271	242	239
CL ueq/L	201	427	40	39
NO3 ueq/L	0.000	0.000	0.000	0.000
SO4 ueq/L	871	1014	606	638
ANC ueq/L	1053	1039	901	777
SUM ANIONS	2385	2751	1788	1693
SUM CATIONS	2853	2826	1859	1710

Appendix 14b. (continued).

Field measurements		Sampling date			
		12-Aug-02	13-Sep-02	28-Oct-02	03-Dec-02
TOTAL	ION	5238	5576	3646	3404
%ION	DIFF	-8.9	-1.3	-1.9	-0.5
SUM	BASES	2853	2826	1859	1710
SUM	ACIDS	1071	1441	645	677
DIFF=	ALK	1782	1385	1213	1033
ANC		1053	1039	901	777
FLAG	%ION	OK	OK	OK	OK
% COND	DIFF	-12.7	12.3	-0.2	-2.0
FLAG	% COND	OK	OK	OK	OK
THEOR.	COND	270	295	181	171
COMMENTS					
dry filter		1.4	1.3	1.4	
filtered wgt		1.4	1.3	1.4	
wgt sample	+flask	1078	1104	1045	
wgt flask		106	108	105	
wgt sample		973	996	939	
wgt solids		0.0084	0.002	0.0032	
solids	mg/L	8.6	2.0	3.4	
Turbidity		4.5	1.3	2.7	

Appendix 14c. Water quality data from Spring Creek.

Field measurements		Sampling date		
		04-Sep-01	28-Sep-01	26-Oct-01
pH		7.4	7.7	6.9
Temp-air	degreesF	71	68	47.3
Temp-water	degreesF	54	45	41.9
conductivity	uS	135	175	110
Discharge	L/s	0.04	0.03	0.05
Laboratory analysis				
pH		7.8	7.9	7.8
ANC	uE/L	1142	1134	1072
Conduct.	uS/cm	167	172	162
Na	mg/L	6.2	6.6	6.1
NH4	mg/L	0	0	0
K	mg/L	2.6	3.0	2.5
Mg	mg/L	4.0	4.2	4.0
Ca	mg/L	20.9	21.9	20.5
F	mg/L	3.1	3.2	3.1
Cl	mg/L	1.4	1.6	1.5
NO3	mg/L	0.1	0.6	0.3
PO4	mg/L	0.0	0.0	0.0
SO4	mg/L	16.1	16.3	16.4
ANC	ueq/L	1142	1134	1072
pH	ueq/L	0.02	0.01	0.02
Ca	ueq/L	1041.02	1092.51	1023.25
Mg	ueq/L	332.94	345.20	327.26
Na	ueq/L	270.51	287.08	267.42
K	ueq/L	66.7	77.4	64.0
NH4	ueq/L	0.000	0.000	0.000
F	ueq/L	161	169	163
CL	ueq/L	40.4	44.0	43.2
NO3	ueq/L	2.2	10.0	4.9
SO4	ueq/L	336	339	341
ANC	ueq/L	1142	1134	1072
SUM	ANIONS	1682	1697	1624

Appendix 14c. (continued).

Field measurements		Sampling date		
		04-Sep-01	28-Sep-01	26-Oct-01
SUM	CATIONS	1711	1802	1682
TOTAL	ION	3393	3499	3306
%ION	DIFF	-0.86	-3.02	-1.75
SUM	BASES	1711	1802	1682
SUM	ACIDS	379	393	389
DIFF=	ALK	1332	1409	1293
ANC		1142	1134	1072
FLAG	% ION	OK	OK	OK
% COND	DIFF	-1.21	-1.02	-0.54
FLAG	% COND	OK	OK	OK
THEOR.	COND	165	170	161
COMMENTS				
dry filter		1	1	1
filtered wgt		1	1	1
wgt sample	+flask	1022	1043	1063
wgt flask		108	104	105
wgt sample		914	939	958
wgt solids		0.004	0.003	0.005
solids	mg/L	4.2	3.0	5.2
Turbidity		3.4	2.0	1.9

Appendix 14d. Water quality data from Brush Creek.

Field measurements		Sampling date			
		06-Aug-01	27-Sep-01	25-Oct-01	30-Nov-01
pH		8.3	8.0	6.9	8.5
Temp-air	degreesC	24.4	26.0	12.5	3.0
Temp-water	degreesC	15.6	11.2	6.0	3.0
Conductivity	uS	190	190	120	165
Discharge	L/s	1.1	0.3	0.6	not measured
Laboratory analysis					
pH		7.9	8.4	7.9	7.8
ANC	uE/L	1304	1194	1212	1118
Conduct.	uS/cm	221	182	170	170
Na	mg/L	8.2	6.0	5.6	5.2
NH4	mg/L	0	0	0	0
K	mg/L	3.2	3.6	3.0	2.7
Mg	mg/L	4.7	4.6	4.5	4.3
Ca	mg/L	25.1	23.9	22.4	20.8
F	mg/L	3.4	3.7	3.5	3.3
Cl	mg/L	6.4	1.5	1.5	1.7
NO3	mg/L	0.2	0.5	0.0	0.0
PO4	mg/L	0.0	0.0	0.0	0.0
SO4	mg/L	17.4	15.2	15.2	16.3
ANC	ueq/L	1304	1194	1212	1118
pH	ueq/L	0.01	0.00	0.01	0.01
Ca	ueq/L	1250	1193	1116	1040
Mg	ueq/L	384	382	372	354
Na	ueq/L	356	261	245	227
K	ueq/L	82	93	77	68
NH4	ueq/L	0.000	0.000	0.000	0.000
F	ueq/L	180	195	183	175
CL	ueq/L	180.0	42.2	42.5	47.3
NO3	ueq/L	3.5	7.3	0.2	0.3
SO4	ueq/L	362	316	316	338
ANC	ueq/L	1304	1194	1212	1118
SUM	ANIONS	2030	1755	1753	1679
SUM	CATIONS	2072	1929	1810	1690

Appendix 14d. (continued).

Field measurements		Sampling date			
		06-Aug-01	27-Sep-01	25-Oct-01	30-Nov-01
TOTAL	ION	4102	3684	3563	3369
%ION	DIFF	-1.0	-4.7	-1.6	-0.3
SUM	BASES	2072	1929	1810	1690
SUM	ACIDS	546	366	358	386
DIFF=	ALK	1526	1563	1452	1304
ANC		1304	1194	1212	1118
FLAG	%ION	OK	OK	OK	OK
% COND	DIFF	-8.3	-2.2	0.6	-4.3
FLAG	% COND	OK	OK	OK	OK
THEOR.	COND	203	178	171	163
COMMENTS					
dry filter		1	1	1	1
filtered wgt		1	1	1	1
wgt sample	+flask	1105	918	1045	1074
wgt flask		106	93	107	108
wgt sample		999	825	938	966
wgt solids		0.1079	0.0017	0.0024	0.0005
solids	mg/L	108.0	2.1	2.6	0.5
Turbidity		67.4	1.0	1.9	1.0

Appendix 14d. (continued).

Field measurements		Sampling date				
		08-Jan-02	04-Feb-02	04-Mar-02	19-Apr-02	26-Jun-02
pH		8.8	7.6	8.1	6.9	7.7
Temp-air	degreesC	-0.3	2.5	3.5	10.3	NA
Temp-water	degreesC	1.0	0.2	0.5	7.3	12.5
Conductivity	uS	150.0	160.0	110.0	126.0	236.0
Discharge	L/s	2.3	1.1	2.0	2.0	26.9
Laboratory analysis						
pH		7.8	7.8	7.7	7.8	7.9
ANC	uE/L	1004	965	942	1020	1881
Conduct.	uS/cm	151	142	142	149	262
Na	mg/L	5.1	4.9	4.9	5.1	5.8
NH4	mg/L	0	0	0	0	0
K	mg/L	2.5	2.4	2.4	2.6	4.1
Mg	mg/L	4.1	4.0	3.9	3.9	6.6
Ca	mg/L	19.7	19.1	18.7	19.3	34.4
F	mg/L	3.2	3.4	3.3	3.7	2.7
Cl	mg/L	1.6	1.5	1.5	1.7	1.9
NO3	mg/L	0.0	0.0	0.1	0.0	0.0
PO4	mg/L	0.0	0.1	0.0	0.0	0.2
SO4	mg/L	15.7	16.3	16.5	17.2	24.0
ANC	ueq/L	1004	965	942	1020	1881
pH	ueq/L	0.02	0.02	0.02	0.02	0.01
Ca	ueq/L	983	951	932	964	1716
Mg	ueq/L	336	326	321	324	540
Na	ueq/L	221	215	212	221	252
K	ueq/L	64	61	60	66	105
NH4	ueq/L	0.000	0.000	0.000	0.000	0.000
F	ueq/L	169	178	174	193	144
CL	ueq/L	44.7	42.5	43.0	47.2	54.8
NO3	ueq/L	0.7	0.7	0.8	0.6	0.0
SO4	ueq/L	326	339	344	357	499
ANC	ueq/L	1004	965	942	1020	1881
SUM	ANIONS	1544	1524	1504	1618	2579
SUM	CATIONS	1605	1553	1526	1574	2613

NA indicates not measured.

Appendix 14d. (continued).

Field measurements		Sampling date				
		08-Jan-02	04-Feb-02	04-Mar-02	19-Apr-02	26-Jun-02
TOTAL	ION	3149	3078	3030	3192	5192
%ION	DIFF	-1.9	-1.0	-0.7	1.4	-0.6
SUM	BASES	1605	1553	1526	1574	2613
SUM	ACIDS	372	382	388	405	554
DIFF=	ALK	1233	1172	1139	1169	2058
ANC		1004	965	942	1020	1881
FLAG	%ION	OK	OK	OK	OK	OK
% COND	DIFF	0.8	5.0	3.7	3.8	-2.3
FLAG	% COND	OK	OK	OK	OK	OK
THEOR.	COND	153	149	147	154	256
COMMENTS						
dry filter		1	1	1	1	1
filtered wgt		1	1	1	1	1
wgt sample	+flask	1082	1027	1088	932	1130
wgt flask		106	107	109	106	107
wgt sample		975	920	979	826	1023
wgt solids		0.0143	0.0007	0.0017	0.0008	0.0253
solids	mg/L	14.7	0.8	1.7	1.0	24.7
Turbidity		3.8	1.1	1.2	1.5	3.9

Appendix 14d. (continued).

Field measurements	Sampling date				
	18-Jul-02	12-Aug-02	13-Sep-02	04-Nov-02	03-Dec-02
pH	7.7	NA	NA	8.19	8.19
Temp-air degreesC	NA	20.6	15.0	5	5
Temp-water degreesC	NA	15.0	13.3	3.8	2.5
Conductivity uS	300	NA	NA	276	259
Discharge L/s	NA	14.2	no flow above sediment	1.1	3.9
Laboratory analysis					
pH	7.9	7.6	7.6	8.0	8.1
ANC uE/L	2393	2827	3036	2310	2040
Conduct. uS/cm	287	319	332	273	254
Na mg/L	6.4	6.7	5.6	6.7	6.5
NH4 mg/L	0.0	0.3	0.0	0.0	0.0
K mg/L	4.8	5.4	6.4	3.8	3.5
Mg mg/L	7.7	8.4	9.5	8.0	7.4
Ca mg/L	41.1	43.0	56.1	39.9	36.2
F mg/L	3.3	3.1	2.7	3.0	3.1
Cl mg/L	2.0	2.6	3.0	2.2	2.2
NO3 mg/L	0.1	1.0	0.0	0.4	0.4
PO4 mg/L	0.1	0.0	0.0	0.1	0.0
SO4 mg/L	19.3	18.2	27.7	17.3	18.9
ANC ueq/L	2393	2827	3036	2310	2040
pH ueq/L	0.01	0.02	0.02	0.01	0.01
Ca ueq/L	2052	2144	2799	1993	1809
Mg ueq/L	637	692	780	659	605
Na ueq/L	280	291	246	294	282
K ueq/L	122	137	165	97	90
NH4 ueq/L	0.000	19.237	0.000	0.000	0.000
F ueq/L	172	161	144	156	162
CL ueq/L	56.1	73.8	84.1	62.2	61.2
NO3 ueq/L	1.1	15.8	0.0	6.2	5.7
SO4 ueq/L	401	378	576	360	393
ANC ueq/L	2393	2827	3036	2310	2040
SUM ANIONS	3022	3456	3840	2894	2662
SUM CATIONS	3091	3284	3989	3042	2786

NA indicates not measured.

Appendix 14d. (continued).

Field measurements		Sampling date				
		18-Jul-02	12-Aug-02	13-Sep-02	04-Nov-02	03-Dec-02
TOTAL	ION	6113	6740	7828	5936	5448
%ION	DIFF	-1.1	2.6	-1.9	-2.5	-2.3
SUM	BASES	3091	3264	3989	3042	2786
SUM	ACIDS	458	468	660	428	460
DIFF=	ALK	2633	2797	3329	2614	2326
ANC		2393	2827	3036	2310	2040
FLAG	%ION	OK	OK	OK	OK	OK
% COND	DIFF	3.1	2.2	16.1	5.2	4.1
FLAG	% COND	OK	OK	OK	OK	OK
THEOR.	COND	296.0	326.2	385.4	287.1	264.4
COMMENTS						
dry filter		1.4	1.4	1.4	1.4	
filtered wgt		1.4	1.4	24.5	1.5	
wgt sample	+flask	1104	1064	1118	1046	
wgt flask		107	106	109	107	
wgt sample		996	958	1009	938	
wgt solids		0.0177	0.0056	23.1212	0.1982	
solids	mg/L	17.8	5.8	22919.5	211.2	
Turbidity		5.4	1.6	250.0	50.2	

APPENDIX 15

**Survey data for the cross-sections in Brush Creek, Saloon Gulch and No
Name Creek.**

**Appendix 15a. Survey data for the first cross-section
in Brush Creek in 2001 and 2002.**

Station (m)	06-Aug-01 ELEV	Notes	Station (m)	26-Jul-02 ELEV	Notes
0.00	100.00	Left pin top / BM	14.25	99.98	Left pin bottom
0.00	99.85	Left pin bottom	14.25	99.79	Left pin top
0.61	99.69		14	99.53	
1.22	99.66		13.5	99.06	
1.83	99.53		13	98.68	
2.44	99.42		12.5	98.48	
3.05	99.32		12	98.22	
3.47	99.21	bankfull	11.5	98.07	
3.60	99.10	LEW	11	97.93	
3.66	99.10		10.5	97.83	
3.81	99.08	thalweg	10.2	97.71	
3.99	99.11	REW	10	97.63	
4.15	99.22	Bankfull	9.5	97.47	
4.57	99.28		9	97.44	
5.18	99.28		8.5	97.24	
5.79	99.59		8	97.04	
6.13	99.75	Top right pin	7.7	96.89	Sediment deposit
6.13	99.89	Bottom right pin	7.5	96.88	
	101.49	BM	7	96.91	
			6.5	96.87	
			6.2	96.88	LEW
			6	96.81	Middle channel
			5.7	96.87	REW
			5.5	97.13	
			5	97.25	
			4.5	97.15	
			4	97.19	
			3.5	97.66	
			3	97.91	
			2.5	98.15	
			2	98.46	
			1.5	98.81	
			1	99.05	
			0.5	99.46	
			0	99.78	Right pin bottom
			0	100.00	Right pin top

Appendix 15a. (continued).

Station (m)	20-Sep-02 ELEV	Notes
14.23	100.00	Left pin bottom
14.23	99.79	Left pin top
14	99.27	
13.5	98.88	
13	98.59	
12.5	98.35	
12	98.14	
11.5	98.03	
11	97.89	
10.5	97.79	Water mark 7-Jul-02
10	97.51	
9.5	97.50	
9	97.66	
8.6	97.22	
8.5	97.00	
8	96.84	
7.8	96.80	
7.4	96.78	
7.1	96.80	
6.8	96.84	
6.5	96.79	
6	96.76	Channel bottom
5.5	97.18	
5	97.26	
4.5	97.33	
4	97.34	
3.5	97.82	Water mark 7-Jul-02
3	98.07	
2.5	98.34	
2	98.67	
1.5	98.97	
1	99.36	
0.5	99.67	
0	99.81	Right pin bottom
0	100.02	Right pin top

Appendix 15b. Survey data for the second cross-section in Brush Creek in 2002.

Station (m)	7-Jul-02 ELEV	Notes
0.00	100	Right pin top
0.00	99.82	Right pin bottom/water mark (July 21 storm)
0.61	99.66	
1.22	99.66	Top of the debris pile
1.83	99.68	Top of the debris pile
2.44	99.76	Top of the debris pile
2.74	99.77	Top of the debris pile
3.05	99.65	Top of the debris pile
3.35	99.17	
3.66	99.15	
3.96	99.12	
4.27	99.06	
4.57	98.97	
4.88	98.83	
5.18	98.72	
5.49	98.61	
5.79	98.45	
5.85	98.34	Right bankfull
6.10	98.19	
6.40	98.19	REW
6.64	98.19	LEW
6.71	98.24	
7.01	98.38	Left bankfull
7.31	98.55	
7.62	98.54	
7.92	98.74	
8.23	98.88	
8.53	99.13	
8.90	99.46	Left pin bottom
8.90	100.00	Left pin top and water mark (July 21 storm)

Appendix 15b. (continued).

Station (m)	20-Sep-02 ELEV	Notes
0.00	100.00	Right pin top
0.00	99.83	Right pin bottom/watermark
0.30	99.75	
0.61	99.66	
0.91	99.65	
1.22	99.64	
1.52	99.61	Bottom wood debris
1.83	99.67	
2.13	99.63	
2.44	99.78	Wood debris
2.74	99.49	Wood debris
3.05	99.74	Top wood debris
3.35	99.23	Bottom wood debris
3.66	99.22	
3.96	99.17	
4.27	99.09	
4.57	99.00	
4.88	98.85	
5.18	98.74	
5.49	98.63	
5.79	98.38	Right bottom sediment
6.10	98.38	
6.40	98.38	
6.71	98.39	
7.01	98.39	LEW
7.13	98.45	Left edge sediment
7.38	98.45	Left bottom sediment
7.62	98.54	
7.92	98.72	
8.23	98.88	
8.53	99.16	
8.84	99.42	
8.90	99.82	Left pin top
8.90	99.47	Left pin bottom

Appendix 15c. Survey data for the third cross-section in Brush Creek in 2002.

Station (m)	02-Aug-02 ELEV	Notes	Station (m)	20-Sep-02 ELEV	Notes
0.00	100.00	Left pin top	0.00	100	Left pin top
0.00	99.68	Left pin bottom	0.00	99.70	Left pin bottom
0.50	99.36		0.50	99.37	
1.00	98.92	Left bankfull and water mark (July 21 storm)	1.00	98.98	
1.50	98.60		1.50	98.61	
2.00	98.33		2.00	98.35	
2.50	98.11		2.50	98.12	
3.00	97.83		3.00	97.85	
3.50	97.56	Left bank	3.50	97.55	
3.60	97.31	LWE	3.60	97.46	
3.65	97.27	Channel bottom	3.60	97.05	
3.80	97.29	RWE	3.70	97.03	Channel bottom
4.00	97.30		3.80	97.26	
4.15	97.43	Right bank	4.00	97.29	
4.50	97.47		4.50	97.28	
5.00	97.73		4.60	97.44	
5.50	97.99		5.00	97.71	
6.00	98.27		5.50	97.93	
6.50	98.43		6.00	98.15	
7.00	98.59		6.50	98.45	
7.50	98.70		7.00	98.59	
8.00	98.66		7.50	98.69	
8.50	98.69		8.00	98.68	
9.00	98.66		8.50	98.69	
9.50	98.68		9.00	98.67	
10.00	98.90	Right bankfull and water mark (July 21 storm)	9.50	98.70	
10.50	99.09		10.00	98.90	
11.00	99.47		10.50	99.08	
11.25	99.57	Right pin bottom	11.00	99.47	
11.25	100.00	Right pin top	11.26	99.58	Right pin bottom
			11.26	100.00	Right pin top

**Appendix 15d. Survey data for the first cross-section
in Saloon Gulch in 2001 and in 2002.**

Station (m)	01-Nov-01 ELEV	Notes
0.0	100.0	Left pin top / BM
0.0	99.7	Left pin bottom
0.9	99.7	
1.2	99.6	
1.8	99.5	
2.4	99.3	
3.0	99.1	
3.7	99.0	
4.3	98.8	
4.9	98.7	
5.5	98.5	
6.1	98.4	
6.6	98.2	LBF
6.6	98.1	LEW
6.7	98.1	Thalweg
6.9	98.1	
7.0	98.1	
7.3	98.1	REW
7.3	98.2	RBF
7.9	98.3	
8.5	98.6	
9.1	98.8	
9.4	99.0	
9.8	99.1	
10.1	99.3	
10.5	99.6	
10.7	99.7	
11.3	99.7	
11.3	99.8	Right pin bottom
11.3	100	Right pin top

Appendix 15d. (continued).

Station (m)	18-Jul-02 ELEV	18-Jul-02 Water level	07-Jul-02 Water level	Notes
0.00	100.0			Left pin top / BM
0.00	99.8			Left pin bottom
0.61	99.7			
1.22	99.6			
1.83	99.5			
2.44	99.3			
3.05	99.1			
3.35	99.0			
3.66	98.9			
3.96	98.9			
4.27	98.8			
4.57	98.7			
4.88	98.7		98.67	Water mark (July 7 storm)
5.18	98.6		98.67	
5.49	98.5	98.13	98.67	
5.79	98.4	98.13	98.67	
6.10	98.4	98.13	98.67	
6.40	98.3	98.13	98.67	LEW
6.58	98.1		98.67	
6.71	98.1		98.67	
7.01	98.1		98.67	REW
7.19	98.2		98.67	
7.31	98.2		98.67	
7.62	98.3		98.67	
7.92	98.4		98.67	
8.23	98.5		98.67	
8.53	98.6		98.67	Water mark (July 7 storm)
8.84	98.7			
9.14	98.8			
9.45	99.0			
9.75	99.2			
10.06	99.3			
10.36	99.6			
10.67	99.7			
11.28	99.7			
11.28	99.8			Right pin bottom
11.28	100			Right pin top/BM

Appendix 15d. (continued).

Station	26-Jul-02 ELEV	Station (m)	20-Sep-02 ELEV	Notes
11.3	100.00	11.3	100.00	Left pin top / BM
11.3	99.75	11.3	99.76	Left pin bottom
11.0	99.72	11.0	99.71	
10.7	99.66	10.7	99.70	
10.4	99.63	10.4	99.65	
10.1	99.58	10.1	99.59	
10.1	99.57	9.8	99.53	
9.8	99.51	9.4	99.43	
9.4	99.40	9.1	99.31	LBF
9.1	99.30	8.8	99.31	
8.8	99.31	8.5	99.30	
8.2	99.27	8.2	99.28	
7.6	99.27	7.9	99.24	
7.0	99.36	7.6	99.25	
6.4	99.35	7.3	99.31	
5.8	99.31	7.0	99.37	
5.2	99.35	6.7	99.34	
4.6	99.35	6.4	99.35	
4.0	99.31	6.1	99.31	
3.4	99.32	5.8	99.25	
2.7	99.33	5.5	99.25	
2.1	99.38	5.2	99.23	
1.5	99.58	4.9	99.28	
0.9	99.68	4.6	99.27	
0.6	99.67	4.3	99.32	
0.3	99.69	4.0	99.29	
0.0	99.75	3.7	99.29	
0.0	100.00	3.8	99.10	Incision
		3.4	99.27	
		3.0	99.35	
		2.7	99.32	
		2.4	99.36	
		2.1	99.40	
		1.8	99.50	
		1.5	99.55	
		1.7	99.55	Right bottom channel
		1.2	99.61	
		0.9	99.63	
		0.6	99.69	
		0.3	99.69	
		0.0	99.75	Right pin bottom
		0.0	100	Right pin top/BM

Appendix 15e. Survey data for the second cross-section in Saloon Gulch in 2002.

Station (m)	18-Jul-02 ELEV	7-Jul-02 Water level	18-Jul-02 Water level	Notes
0.0	100.00			Left pin top / BM
0.0	99.68			Left pin bottom
0.6	99.52			
1.2	99.26			
1.8	99.06			
2.1	98.85			
2.4	98.62			
2.7	98.30	98.2		Water mark
3.0	98.05	98.2		
3.7	97.91	98.2		
4.3	97.71	98.2		
4.9	97.52	98.2	97.6	Bankfull
5.2	97.48	98.2	97.6	
5.5	97.49	98.2	97.6	
5.8	97.49	98.2	97.6	
6.1	97.50	98.2	97.6	
6.3	97.58	98.2	97.6	Left bottom channel
6.4	97.76	98.2	97.6	Bankfull
6.7	97.88	98.2		
7.0	98.03	98.2		
7.3	98.21	98.2		
7.6	98.46	98.2		Water mark
7.9	98.82			
8.2	99.21			
8.5	99.58			
8.8	99.70			Right bottom channel
9.1	99.82			
9.4	99.87			
9.8	99.91			
10.1	99.93			
10.4	99.93			
10.7	99.91			Right pin bottom
10.7	100.00			Right pin top/BM

Appendix 15e. (continued).

Station (m)	26-Jul-02 ELEV	Notes	Station (m)	20-Sep-02 ELEV	Notes
10.7	100.00	Left pin top / BM	10.7	100.00	Left pin top / BM
10.7	99.91	Left pin bottom	10.7	99.91	Left pin bottom
10.06	99.93		10.36	99.93	
9.75	99.91		10.06	99.91	
9.14	99.83		9.75	99.91	
8.8	99.70		9.45	99.85	
8.5	99.58		9.14	99.85	
8.2	99.21	Water mark	8.8	99.70	
7.9	98.82		8.5	99.58	
7.6	98.46		8.2	99.21	Water mark
7.31	98.52		7.9	98.82	
7.01	98.52		7.6	98.46	
6.71	98.52		7.31	98.50	
7.01	98.52		7.01	98.50	
6.71	98.52		6.71	98.50	
6.40	98.52		6.40	98.50	
6.19	98.52	Left bottom channel	6.49	98.50	
6.10	98.50		6.10	98.53	
5.49	98.46		5.79	98.52	Left bottom channel
4.88	98.45		5.49	98.53	
4.27	98.42		5.18	98.52	
3.66	98.47		4.88	98.51	
2.6	98.48		4.57	98.49	
2.4	98.62		4.27	98.48	
2.1	98.85		3.96	98.46	
1.58	99.14	Right bottom channel	3.66	98.48	
1.52	99.16		3.35	98.49	
1.22	99.26		3.05	98.46	
0.91	99.36		2.64	98.47	
0.61	99.52		2.4	98.62	
0.30	99.62		2.4	98.62	
0.0	99.68	Right pin bottom	2.1	98.85	
0.0	100.00	Right pin top/BM	1.58	99.14	Right bottom channel
			1.52	99.16	
			1.22	99.26	
			0.91	99.36	
			0.61	99.52	
			0.30	99.62	
			0.0	99.68	Right pin bottom
			0.0	99.75	Right pin top

Appendix 15f. Survey data from the third cross-section in Saloon Gulch in 2002.

Station (m)	18-Jul-02 ELEV	7-Jul-02 Water level	Notes
15.91	100.00		Left pin top / BM
15.91	99.69		Left pin bottom
15.54	99.69		
15.24	99.70		
14.93	99.71		
14.63	99.69		
14.32	99.62		
14.02	99.55		
13.72	99.45		
13.41	99.34		
13.11	99.13		
12.80	98.95		
12.50	98.79		
12.19	98.58		
11.89	98.45	98.43	Water mark
11.83	98.32	98.43	
11.58	98.16	98.43	
11.28	98.01	98.43	
10.97	97.87	98.43	
10.67	97.77	98.43	Left bottom channel
10.36	97.54	98.43	
10.06	97.40	98.43	
9.75	97.30	98.43	
9.45	97.26	98.43	
9.14	97.24	98.43	
8.84	97.28	98.43	
8.53	97.34	98.43	
8.23	97.35	98.43	
7.92	97.37	98.43	Right bottom channel
7.62	97.40	98.43	Watermark
7.31	97.39	98.43	
7.01	97.40	98.43	
6.71	97.39	98.43	
6.40	97.39	98.43	
6.10	97.37	98.43	
5.79	97.36	98.43	
5.49	97.37	98.43	
5.18	97.35	98.43	
4.88	97.33	98.43	
4.57	97.40	98.43	
4.27	97.65	98.43	
3.96	97.80	98.43	
3.66	98.10	98.43	
3.35	98.43	98.43	Right bottom channel

Appendix 15f. (continued).

Station (m)	18-Jul-02 ELEV	7-Jul-02 Water level	Notes
3.05	98.58		
2.74	98.70		
2.44	98.98		
2.13	99.20		
1.83	99.42		
1.52	99.52		
1.22	99.70		
0.61	99.69		
0.00	99.69		Right pin bottom
0.00	100.00		Right pin top/BM

Appendix 15f. (continued).

Station (m)	26-Jul-02 ELEV	Notes
15.91	100.00	Left pin top / BM
15.91	99.69	Left pin bottom
15.54	99.69	
14.93	99.71	
13.72	99.45	Top left bank
13.41	99.34	
13.41	99.34	
13.11	99.13	
13.11	99.13	
12.80	98.95	
12.50	98.79	
12.19	98.58	
11.89	98.45	
11.83	98.32	Water mark
11.58	98.16	
11.28	98.01	
10.97	97.87	Left bottom channel
9.75	97.91	
9.14	97.88	
8.53	97.97	
7.92	97.98	
7.31	97.96	
6.71	97.97	
6.10	97.93	
5.49	97.90	
4.88	97.90	
4.27	97.90	
3.66	98.02	
3.35	98.43	Right bottom channel
2.74	98.70	Water mark
2.13	99.20	
1.52	99.55	
0.91	99.65	
0.30	99.69	
0.00	99.69	Right pin bottom
0.00	100.00	Right pin top/BM

Appendix 15f. (continued).

Station (m)	20-Sep-02 ELEV	Notes	Station (m)	20-Sep-02 ELEV	Notes
15.91	100.00	Left pin top / BM	2.74	98.70	
15.91	99.69	Left pin bottom	2.44	98.98	
15.54	99.69		2.13	99.20	
14.63	99.69		1.83	99.42	
13.72	99.45		1.52	99.55	
13.72	99.45		1.22	99.66	
13.72	99.45		0.91	99.66	
13.72	99.45		0.61	99.69	
13.41	99.34		0.30	99.69	
13.41	99.34		0.00	99.69	Right pin bottom
13.11	99.13		0.00	100.00	Right pin top/BM
13.11	99.13				
12.80	98.95				
12.50	98.79				
12.19	98.58				
11.89	98.45				
11.83	98.32				
11.58	98.16				
11.28	98.01				
10.97	97.87	Left bottom channel			
9.45	97.93				
9.14	97.94				
8.84	97.95				
8.53	97.92				
8.23	97.94				
7.92	97.96				
7.62	97.97				
7.31	97.98				
7.01	97.99				
6.71	97.98				
6.40	98.00				
6.10	97.99				
5.79	97.95				
5.49	97.94				
5.18	97.91				
4.88	97.90				
4.57	97.88				
4.27	97.88				
3.96	97.88				
3.66	98.10				
3.35	98.46				
3.05	98.53				
3.14	98.53	Right bottom channel			

Appendix 15g. Survey data for the cross-section in No Name Creek in 2001 and in 2002.

Station (m)	15-Aug-01 ELEV	Notes
0	100	Left pin top / BM
0	99.6	Left pin bottom
0.6	98.57	
1.2	97.84	
1.7	97.34	
1.8	97.31	LBF
1.9	97.17	LEW
2	97.1	
2	97.1	
2.1	97.12	
2.2	97.18	REW
2.2	97.24	RBF
2.4	97.36	
3	97.72	
3.7	98.35	
4.3	98.85	
4.9	99.22	
5.5	99.47	
5.6	99.48	Right pin bottom
5.6	99.89	Right pin top

Appendix 15g. (continued).

Station (m)	21-Oct-03 ELEV	NOTES
0	0	Left pin top / BM
0	99.6	Left pin bottom
0.5	98.9	
0.9	98.2	
1.5	97.55	
1.7	97.36	Left bankfull
1.9	97.1	LEW
2	97.1	Thalweg
2.2	97.3	REW
2.6	97.5	
3.3	98	
3.5	98.35	
4	98.7	
4.7	99.36	
5.3	99.62	
5.6	99.73	Right pin bottom
5.6	0	Right pin top

Appendix 16a. Pebble count for Brush Creek in 2001.

Site	Particle size		Millimeters	06-Aug-01			
				COUNT	ITEM PCT	CUM'L COUNT	CUM'L PCT
Brush Creek	Silt clay		0-0.062	16	5.3	16.0	5.3
	Sand	V. fine	0.062-0.125	0	0.0	16.0	5.3
		Fine	0.125-0.25	9	3.0	25.0	8.3
		Medium	0.25-0.5	4	1.3	29.0	9.7
		Coarse	0.5-1.0	7	2.3	36.0	12.0
		V. coarse	1.0-2.0	1	0.3	37.0	12.3
	Gravel	V. fine	2.0-4.0	15	5.0	52.0	17.3
		Fine	4.0-8.0	54	18.0	106.0	35.3
		Medium	8.0-16	85	28.3	191.0	63.7
		Coarse	16-32	59	19.7	250.0	83.3
		V. coarse	32-64	32	10.7	282.0	94.0
	Cobble	Small	64-128	13	4.3	295.0	98.3
		Large	128-256	5	1.7	300.0	100.0
	Boulder	Small	256-512	0	0.0	300.0	100.0
		Medium	512-1024	0	0.0	300.0	100.0
		Large	1024-2048	0	0.0	300.0	100.0
		Bedrock		0	0.0	300.0	100.0

Appendix 16a. (continued).

Site	Particle size		Millimeters	18-Jul-02			
				COUNT	ITEM PCT	CUM'L COUNT	CUM'L PCT
Brush Creek	Silt clay		0-0.062	30	11.2	11.2	11.2
	Sand	V. fine	0.062-0.125	6	2.2	13.4	13.4
		Fine	0.125-0.25	37	13.8	27.1	27.1
		Medium	0.25-0.5	12	4.5	31.6	31.6
		Coarse	0.5-1.0	8	3.0	34.6	34.6
		V. coarse	1.0-2.0	25	9.3	43.9	43.9
	Gravel	V. fine	2.0-4.0	34	12.6	56.5	56.5
		Fine	4.0-8.0	35	13.0	69.5	69.5
		Medium	8.0-16	31	11.5	81.0	81.0
		Coarse	16-32	24	8.9	90.0	90.0
		V. coarse	32-64	8	3.0	92.9	92.9
	Cobble	Small	64-128	4	1.5	94.4	94.4
		Large	128-256	9	3.3	97.8	97.8
	Boulder	Small	256-512	4	1.5	99.3	99.3
		Medium	512-1024	2	0.7	100.0	100.0
		Large	1024-2048	0	0.0	100.0	100.0
		Bedrock		0	0.0	100.0	100.0

Appendix 16b. Pebble count for Saloon Gulch in 2001.

Site	Particle size		Millimeters	01-Nov-01			
				COUNT	ITEM PCT	CUM'L COUNT	CUM'L PCT
Saloon Gulch	Silt clay		0-0.062	23	7.7	23.0	7.7
	Sand	V. fine	0.062-0.125	0	0.0	23.0	7.7
		Fine	0.125-0.25	1	0.3	24.0	8.0
		Medium	0.25-0.5	0	0.0	24.0	8.0
		Coarse	0.5-1.0	1	0.3	25.0	8.3
		V. coarse	1.0-2.0	3	1.0	28.0	9.3
	Gravel	V. fine	2.0-4.0	29	9.7	57.0	19.0
		Fine	4.0-8.0	130	43.3	187.0	62.3
		Medium	8.0-16	99	33.0	286.0	95.3
		Coarse	16-32	12	4.0	298.0	99.3
		V. coarse	32-64	1	0.3	299.0	99.7
	Cobble	Small	64-128	1	0.3	300.0	100.0
		Large	128-256	0	0.0	300.0	100.0
	Boulder	Small	256-512	0	0.0	300.0	100.0
		Medium	512-1024	0	0.0	300.0	100.0
		Large	1024-2048	0	0.0	300.0	100.0
		Bedrock		0	0.0	300.0	100.0

Appendix 16b. (continued).

Site	Particle size		Millimeters	18-Jul-02			
				COUNT	ITEM PCT	CUM'L COUNT	CUM'L PCT
Saloon Gulch	Silt clay		0-0.062	14	4.8	14.0	4.8
	Sand	V. fine	0.062-0.125	9	3.1	23.0	7.9
		Fine	0.125-0.25	10	3.4	33.0	11.4
		Medium	0.25-0.5	8	2.8	41.0	14.1
		Coarse	0.5-1.0	12	4.1	53.0	18.3
		V. coarse	1.0-2.0	31	10.7	84.0	29.0
	Gravel	V. fine	2.0-4.0	61	21.0	145.0	50.0
		Fine	4.0-8.0	79	27.2	224.0	77.2
		Medium	8.0-16	62	21.4	286.0	98.6
		Coarse	16-32	3	1.0	289.0	99.7
		V. coarse	32-64	0	0.0	289.0	99.7
	Cobble	Small	64-128	1	0.3	290.0	100.0
		Large	128-256	0	0.0	290.0	100.0
	Boulder	Small	256-512	0	0.0	290.0	100.0
		Medium	512-1024	0	0.0	290.0	100.0
		Large	1024-2048	0	0.0	290.0	100.0
		Bedrock		0	0.0	290.0	100.0

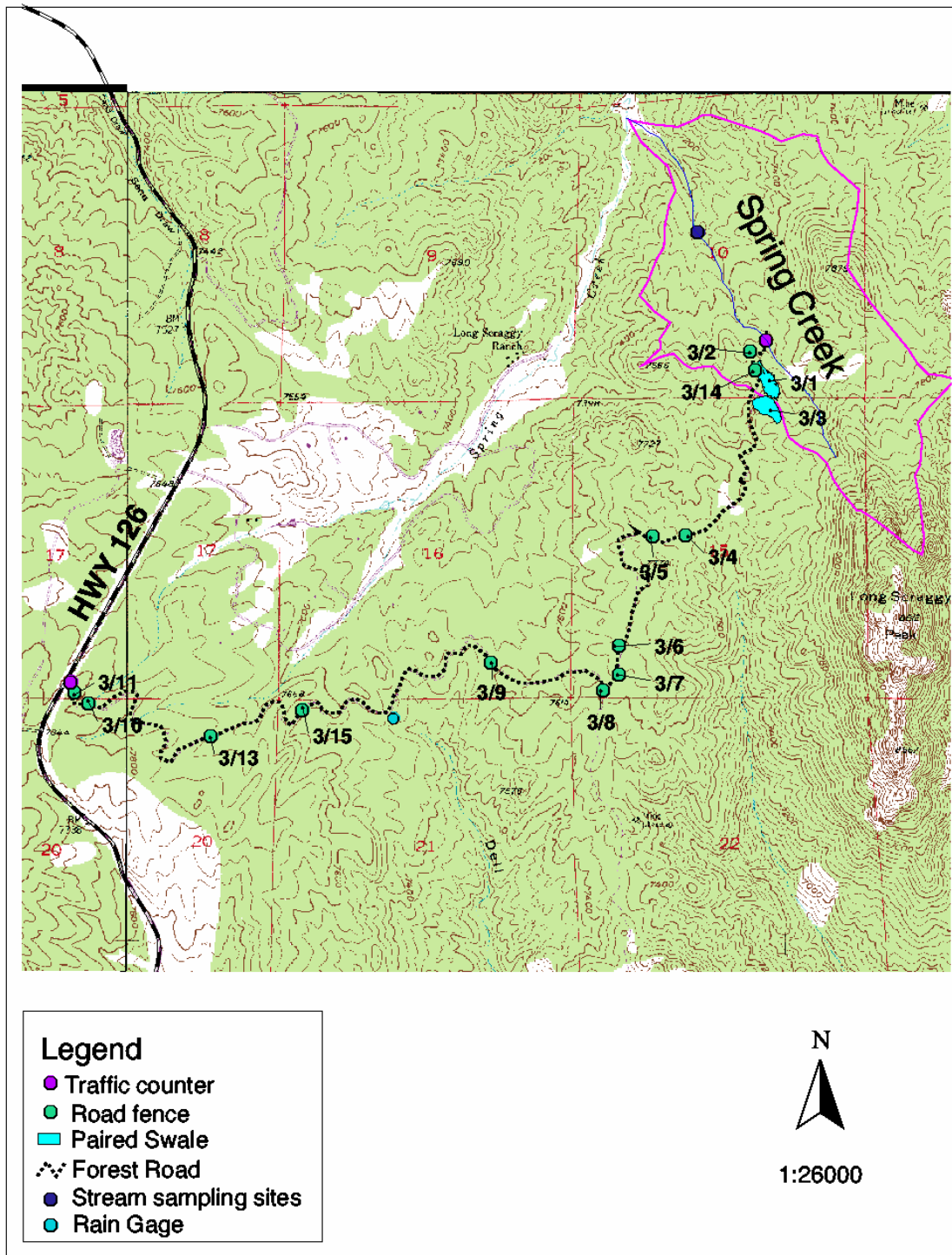
Appendix 17a. Percent eroding banks in Brush Creek in 2001 and 2002. Data are in feet.

Site	Date	Left bank (downstream)			Right bank (dowstream)			Total unstable bank distance
		Start	Stop	Distance	Start	Stop	Distance	
Brush Creek	06-Aug-01	80	85	5	240	241	1	Left 152
		120	124	4	306	308	2	Right 99
		169	251	82	450	465	15	Total bank distance
		358	361	3	503	553	50	Left 1000
		608	630	22	563	571	8	Right 1000
		678	688	10	641	648	7	Percent bank instability
		718	738	20	660	664	4	Left 15.2
		745	748	3	873	876	3	Right 9.9
		964	967	3	910	915	5	Total 12.55
				0	964	968	4	
	18-Jul-02	Left bank (downstream)			Right bank (dowstream)			Total unstable bank distance
		Start	Stop	Distance	Start	Stop	Distance	
		2	50	48	2	56	54	Left 659
		66	253	187	57	253	196	Right 675
		262	317	55	262	317	55	Total bank distance
		345	379	34	323	334	11	Left 1000
		407	425	18	348	379	31	Right 1000
		430	447	17	402	425	23	Percent bank instability
		593	645	52	430	447	17	Left 65.9
		667	791	124	600	645	45	Right 67.5
		841	867	26	667	791	124	Total 66.7
		882	959	77	841	867	26	
		979	1000	21	882	954	72	
				0	979	1000	21	

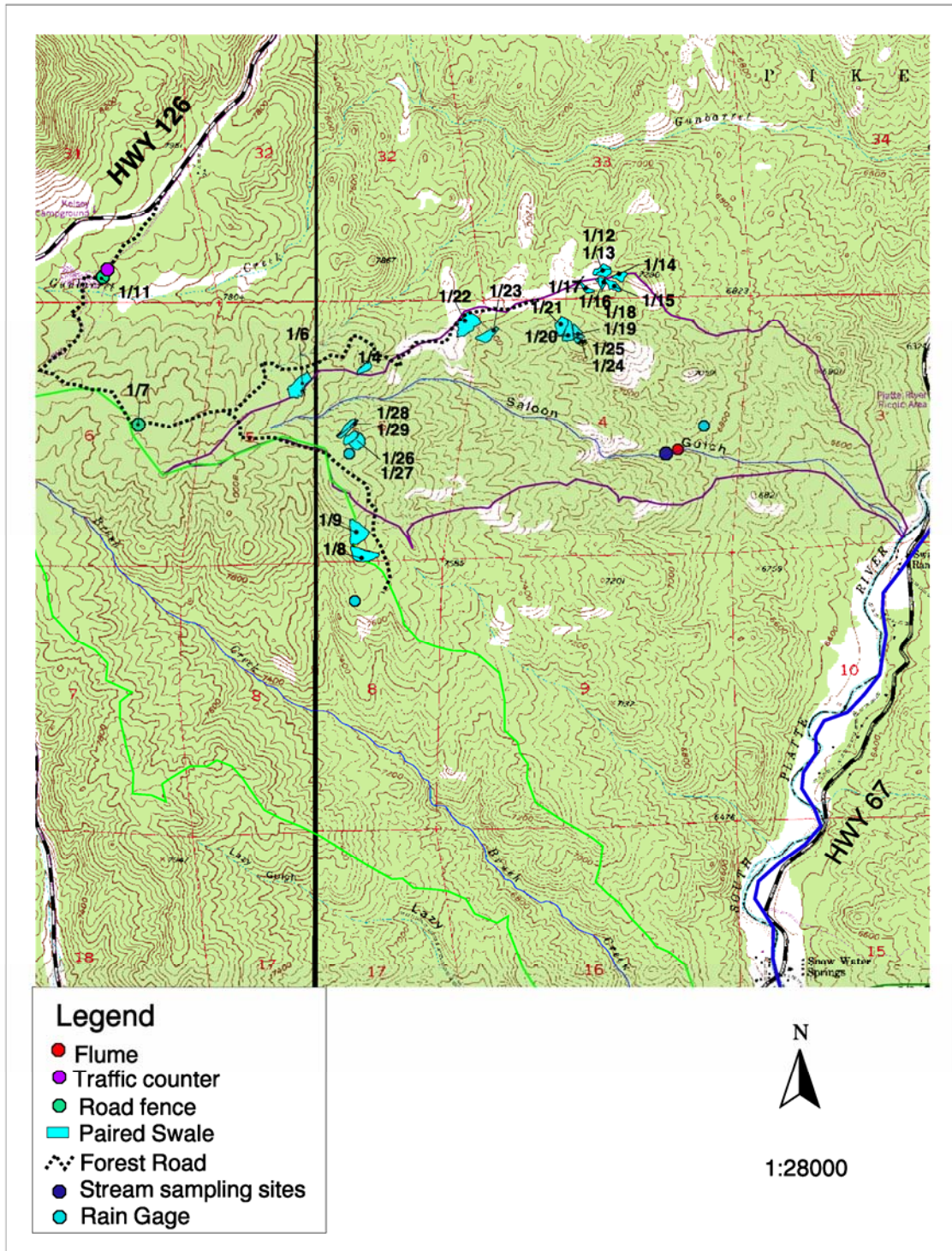
Appendix 17b. Percent eroding banks in Saloon Gulch in 2001 and 2002. Data are in feet.

Saloon Gulch	01-Nov-02	Left bank (downstream)			Right bank (dowstream)			Total unstable bank distance
		Start	Stop	Distance	Start	Stop	Distance	
		262	264	2	715	728	13	Left 53
		520	526	6	776	780	4	Right 20
		548	559	11	837	840	3	Total bank distance
		592	600	8			0	Left 931
		683	692	9			0	Right 931
		806	823	17			0	Percent bank instability
				0			0	Left 5.7
				0			0	Right 2.1
				0			0	Total 3.9
	18-Jul-02	Left bank (downstream)			Right bank (dowstream)			Total unstable bank distance
		Start	Stop	Distance	Start	Stop	Distance	
		23	48	25	35	59	24	Left 224
		64	168	104	72	168	96	Right 147
		434	509	75	509	524	15	Total bank distance
		546	554	8	546	554	8	Left 580
		570	582	12	576	580	4	Right 580
				0			0	Percent bank instability
				0			0	Left 38.6
				0			0	Right 25.3
				0			0	Total 32.0

Appendix 18a. Location of the sediment fences, traffic counters, rain gauge, and study reach in the Spring Creek catchment.



Appendix 18b. Location of the sediment fences, traffic counter, rain gauge, and study reach in the Upper Saloon Gulch catchment.



Appendix 18c. Location of the sediment fences, traffic counters, rain gauge, and study reach in the No Name Creek catchment.

