

Volcanic Waters Data Set

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Location	Description
Mammoth Mountain - Long Valley Caldera	Site Info
Mammoth Mountain - Long Valley Cladera	DIC
Mammoth Mountain - Long Valley Cladera	Anions
Mammoth Mountain - Long Valley Cladera	Isotopes
Mammoth Mountain - Long Valley Cladera	cations
Lassen Area	Site Info
Lassen Area	DIC
Lassen Area	Anions
Lassen Area	Isotopes
Three Sisters Area	Site Info
Three Sisters Area	DIC
Three Sisters Area	Anions
Three Sisters Area	Isotopes
Hot Creek	Site Info
Hot Creek	Anions

Note: If you have Adobe Acrobat (*not Acrobat Reader*) you may use the Table/Formatted Text Select tool to extract data from this PDF file to your spreadsheet.

Mammoth Mountain/Long Valley caldera site description

#	sample ID	description (collected by)	date	Lat.	Long.	elev. (m)
				(NAD 83)	(NAD 83)	
1	1BE95	Horseshoe Lake under ice 18.4 m depth	950606	37.6083	119.0170	2740
2	2BE95	Horseshoe Lake under ice 10 m depth	950606	37.6083	119.0170	2740
3	3BE95	Horseshoe Lake under ice 0 m depth	950606	37.6083	119.0170	2740
4	4BE95	Horseshoe Lake area snowpack	950606	37.6083	119.0170	2740
5	6BE95	Chair 15 spring	950928	37.6360	118.9945	2545
6	MMSA-1	Mammoth Mountain ski area well 1 (C. Farrar)	951100	37.65111	119.03722	2710
7	MMSA-1	Mammoth Mountain ski area well 1	960801	37.65111	119.03722	2710
8	MMSA-2A	Mammoth Mountain ski area well 2A (C. Farrar)	951102	37.65111	119.023889	2675
9	MMSA-2B	Mammoth Mountain ski area well 2B	960801	37.65111	119.02389	2675
10	LB-1	Forest Service well nr. Horseshoe lake (C. Farrar)	951017	37.60889	119.01361	2730
11	LB-1	Forest Service well nr. Horseshoe lake (C. Farrar)	960718	37.60889	119.01361	2730
12	BS	Big Springs	960805	37.75028	118.9375	2204
13	CH12S	Chair 12 spring	960924	37.65028	119.04361	2750
14	CH15S	Chair 15 spring	960924	37.63639	118.99583	2545
15	LS	Laurel Spring	960805	37.61694	118.89361	2195
16	MIN	Minaret Spring	960805	37.6525	119.05139	2735
17	MLS	Main Lodge Spring near base of ski tower	960805	37.64944	119.03667	2715
18	MMSA-3	Mammoth Mountain ski area well 3	960801	37.64611	119.00833	2655
19	RMCS	Red's Meadow cold spring	960802	37.6175	119.0688	2442
20	RMR	Red's Meadow road spring	960912	37.67417	119.06972	2580
21	RMT	Red's Meadow hot spring tub	960802	37.61944	119.07167	2335
22	SL	Sotcher Lake Spring	960924	37.62389	119.0700	2355
23	TLS	Twin Lakes Spring near waterfall from Lake Mamie	960731	37.61222	119.00944	2680
24	VSS	Valentine Soda Spring	960805	37.63167	118.99417	2455
25	HSL(18)	Horseshoe Lake 18.4 m depth (C. Farrar)	960717	37.60889	119.0183	2712
26	HSL-1	Chris' HSL well (C. Farrar)	960718	37.61333	119.0194	2738
27	CH-11A	Chris' Chair 11 well (C. Farrar)	960718	37.64639	119.0436	2777
28	LBCS	Lower Boundary Creek spring	970618	37.6028	119.0651	2442
29	HS	Hartley Spring	970616	37.7669	119.0407	2646
30	Crestview	Well at Caltrans rest area	970616	37.7312	118.9693	2300
31	CH12S	Chair 12 spring	970616	37.6503	119.0436	2750
32	V72S	Vault 72 spring near site of original MLS	970820	37.6504	119.0377	2710
33	LBCS	Lower Boundary Creek spring	970822	37.6028	119.0651	2442
34	lowest LBCS	LBCS orifice with lowest conductivity	970822	37.6028	119.0651	2442
35	avg LBCS	average of all orifices of LBCS	970822	37.6028	119.0651	2442
36	avg LBC	average of all orifices of LBC	970822	37.6037	119.0648	2442
37	LBC (30 m)	Lower Boundary Creek 30 m below orifice	970822	37.6033	119.0650	2440
38	LBC (70 m)	Lower Boundary Creek 70 m below orifice	970822	37.6031	119.0655	2436
39	LBC (200 m)	Lower Boundary Creek 200 m below orifice	970822	37.6029	119.0664	2430
40	LBC (at trail)	Lower Boundary Creek at trail below orifice	970822	37.6022	119.0672	2422
41	SJTAT	San Joaquin tributary spring above trail	970822	37.6063	119.0698	2445
42	ASS	Artesian soda spring	970822	37.6015	119.0645	2430
43	PDS	Panorama dome spring	970823	37.6288	118.9971	2472
44	CH12S	Chair 12 spring	970824	37.6503	119.0436	2750
45	VSS	Valentine Soda Spring	970823	37.63167	118.99417	2455
46	Twin L. in.	outlet of Lake Mamie	970910	37.6110	119.0104	2710
47	Twin L. out.	outlet of lowest Twin Lake	970910	37.6238	119.0061	2610
48	RMCS	Red's Meadow cold spring	970909	37.6175	119.0688	2442
49	Benioff Sp.	Spring below Benioff cabin (R. Bailey)	971000	37.6171	119.0134	2715
50	CH12S	Chair 12 spring	980811	37.6503	119.0436	2750
51	RMCS	Red's Meadow cold spring	980813	37.6175	119.0688	2442
52	LBCS	Lower Boundary Creek spring	980813	37.6028	119.0651	2442
53	LBC	Lower Boundary Creek	980813	37.6037	119.0648	2442
54	LBCN	Lower Boundary Creek north	980813	37.6040	119.0666	2442
55	ASS	Artesian soda spring	980813	37.6015	119.0645	2430
56	CTW-2	Caltrans maintenance yard well	980811	37.7530	118.9837	2294
57	BS	Big Springs	980811	37.7503	118.9375	2204
58	CTRAW	Well at Caltrans rest area	980811	37.7312	118.9693	2300
59	CCS	Crater Creek spring	981006	37.5978	119.0656	2418
60	PSBBC	water from pipe below Bailey cabin near upper Twin Lake	981007	37.6153	119.0116	2622
61	DCWELL2	Dry Creek well 2	981008	37.6634	119.0181	2565
62	DCWELL6	Dry Creek well 6 (J. Rogie)	981010	37.6665	119.0182	2555
63	HSL-1	(C. Farrar)	980602			
64	HSL-2	(C. Farrar)	980602			
65	HSL-3	(C. Farrar)	980604			
66	LM-2	(C. Farrar)	980604			
67	55VILC-1	Mono Tunnel water (C. Farrar)	970000			
68	ASS	Artesian soda spring	990608	37.6015	119.0645	2430
69	LBC	Lower Boundary Creek	990608	37.6037	119.0648	2442
70	LBCS	Lower Boundary Creek spring	990608	37.6028	119.0651	2442
71	RMCS	Red's Meadow cold spring	990608	37.6175	119.0688	2442
72	RMT	Red's Mdw. Tub	990908	37.61944	119.07167	2335
73	RMCS	Red's Meadow cold spring	990908	37.6175	119.0688	2442
74	LBC	Lower Boundary Creek	990908	37.6037	119.0648	2442
75	ASS	Artesian soda spring	990908	37.6015	119.0645	2430
76	SLS	Sotcher Lake Spring	990908	37.62389	119.0700	2355
77	CH12W	Chair12 Well	990909			
78	BS	Big Springs	990910	37.7503	118.9375	2204
79	USC	Upper Soda Campground spring	990911	37.6530	119.0783	2340
80	DPP	Devil's Postle soda spring	990911	37.6275	119.0856	2298
81	LS	Laurel Springs	990911	37.61694	118.89361	2195
82	ASS	Artesian soda spring	20010820	37.6015	119.0645	2430
83	BS	Big Springs	20010820	37.7503	118.9375	2204
84	CTRAW	Well at Caltrans rest area	20010820	37.7312	118.9693	2300

notes

later called CH15S

also called LM-1
also called LM-1

listed as Reds Creek Cold Spring (RCCS) in some reports

later called CTRAW

Crestview well

Crestview well

Mammoth Mountain/Long Valley caldera

*"ex" refers to data obtained from direct determination of DIC using a vacuum extraction technique (see, Evans et al., 2002)

#	sample	date	Temp. C	cond. $\mu\text{S/cm}$	diss. O ₂ mg/L	alkalinity mg/kg	HCO ₃ ⁻ mmol/kg	pH	pH (ex)	H ₂ CO ₃ mmol/kg	H ₂ CO ₃ (ex) mmol/kg	DIC mmol/kg	DIC (ex) mmol/kg	pCO ₂ atm	pCO ₂ (ex) atm	notes
1	1BE95	950606	4.2	60	0.1	37	0.61	7.04				0.17		0.00262		
2	2BE95	950606	3.8	31	1.3	13	0.21	6.96		0.08		0.29		0.00111		
3	3BE95	950606	0.0	20	7.5			6.15								
4	4BE95	950606														isotopes only
5	6BE95	950928														isotopes only
6	MMSA-1	951100	4.5	276		115	1.88	5.71		11.62		13.51		0.17379		
7	MMSA-1	960801	5.3	229		109	1.79	5.43		19.89		21.68		0.30875		
8	MMSA-2A	951102	5.5	256		138	2.26	5.65		15.29		17.55		0.23733		
9	MMSA-2B	960801	10.1	372		210	3.44	5.79		15.08		18.52		0.27951		
10	LB-1	951017	6.0	158		101	1.66	7.03		0.46		2.11		0.00734		
11	LB-1	960718	5.0	189		120	1.97	6.97		0.64		2.60		0.00988		
12	BS	960805	11.8	196		116	1.90	7.23		0.29		2.20		0.00565		
13	CH12S	960924	2.4	171		121	1.98	5.20		43.38		45.37		0.60127		
14	CH15S	960924	7.7	381		255	4.18	5.94		13.84		18.02		0.23098		
15	LS	960805	11.8	105		44	0.72	8.87		0.00		0.72		0.00005		pH measured 9/12/96
16	MIN	960805	4.1	229		140	2.29	7.08		0.60		2.90		0.00903		
17	MLS	960805	2.8	284		100	1.64	5.59		14.61		16.24		0.20243		
18	MMSA-3	960801	7.3	73		33	0.54	6.02		1.49		2.03		0.02486		
19	RMCS	960802	7.5	227		156	2.56	5.48		24.41		26.97		0.40753		
20	RMR	960912	4.9	50		37	0.61	7.14		0.14		0.75		0.00208		
21	RMT	960802	46.0			516	8.46	6.60		4.22		12.67		0.19538		pH from 1985 report
22	SL	960924	18.0	256		173	2.84	6.02		6.57		9.41		0.15743		
23	TLS	960731	5.3	42		26	0.43	6.68		0.27		0.69		0.00417		
24	VSS	960805	6.5	255		165	2.70	5.76		13.28		15.87		0.21387		pH measured in 7/95
25	HSL(18)	960717	5.1			11	0.18	6.42		0.21		0.39		0.00321		
26	HSL-1	960718														isotopes only
27	CH-11A	960718														isotopes only
28	LBCS	970618	6.9	195		147	2.41	5.42		27.03		29.44		0.43521		
29	HS	970616	4.0	34		31	0.51	6.81		0.25		0.76		0.00372		manual temp. compensation of conductivity
30	Crestview	970616	13.0	199		131	2.15	7.22		0.33		2.48		0.00681		manual temp. compensation of conductivity
31	CH12S	970616	2.4	108		88	1.44	5.21		30.83		32.27		0.42733		manual temp. compensation of conductivity
32	V72S	970820	9.7	78.2		38	0.62	7.39		0.07		0.69		0.00125		
33	LBCS	970822	7.8	225		139	2.28	5.41		25.56		27.84		0.42663		
34	lowest LBCS	970822	7.1	206		127	2.08	5.46		20.81		22.89		0.34741		
35	avg LBCS	970822	6.8	212		131	2.15	5.41		24.65		26.80		0.39687		temp, pH, sp. cond. measured; other values calculated
36	avg LBC	970822	7.2	222		138	2.26	5.41		25.38		27.64		0.42356		temp, pH, sp. cond. measured; other values calculated
37	LBC (30 m)	970822	8.0	223		138	2.26	5.65		14.27		16.53		0.24679		temp, pH, sp. cond. measured; other values calculated
38	LBC (70 m)	970822	8.2	222		138	2.26	5.90		8.02		10.29		0.13878		temp, pH, sp. cond. measured; other values calculated
39	LBC (200 m)	970822	9.0	224		138	2.26	6.51		1.92		4.19		0.03448		temp, pH, sp. cond. measured; other values calculated
40	LBC (at trail)	970822	9.5	226		138	2.26	6.80		0.99		3.25		0.01768		temp, pH, sp. cond. measured; other values calculated
41	SJTAT	970822	7.1	272		176	2.88	5.56		22.91		25.80		0.38243		
42	ASS	970822	6.9	200		124	2.03	5.37		25.58		27.62		0.41191		
43	PDS	970823	11.2	363		235	3.85	7.98		0.11		3.96		0.00203		
44	CH12S	970824	2.6	206		133	2.18	5.17		51.10		53.27		0.70816		
45	VSS	970823	6.7	278		153	2.51	5.44		26.87		29.37		0.43258		
46	Twin L. in.	970910	14.3	38		19	0.31	7.83		0.01		0.32		0.00025		
47	Twin L. out.	970910	12.8	106		62	1.02	7.10		0.21		1.23		0.00416		
48	RMCS	970909	7.4	242				5.44								
49	Benioff Sp.	971000	25.0	74		45	0.74	6.02		1.58		2.31		0.04610		All values measured in Lab.
50	CH12S	980811	2.4	147	3.2	91	1.49	5.07	5.10	44.01	40.96	45.50	42.46	0.60999	0.56775	
51	RMCS	980813	7.4	248	4.2	152	2.49	5.41	5.39	27.95	29.30	30.44	31.79	0.46653	0.48910	
52	LBCS	980813	7.2	224	4	143	2.34	5.43	5.42	25.11	25.70	27.45	28.04	0.41915	0.42893	
53	LBC	980813	7.0	208	4.4	127	2.08	5.34	5.35	27.44	26.77	29.52	28.86	0.45797	0.44692	
54	LBCN	980813	6.8	253	4.6	159	2.61	5.49	5.46	24.88	26.51	27.49	29.12	0.40066	0.42685	
55	ASS	980813	6.2	199	4.6	123	2.02	5.48	5.39	19.70	24.13	21.71	26.15	0.31716	0.38856	
56	CTW-2	980811	17.6	148	4	74	1.21	8.46		0.01		1.22	0.96	0.00024		DIC exsolved is less accurate
57	BS	980811	12.3	225	7.3	129	2.11	7.21		0.34		2.45	1.74	0.00672		DIC exsolved is less accurate
58	CTRAW	980811	13.8	246	7	153	2.51									
59	CCS	981006	6.8	102	3	66	1.08	5.81		4.94		6.03		0.07960		
60	PSBBC	981007	5.0	294		195	3.20	6.70	6.89	1.93	1.24	5.12	4.44	0.02989	0.01930	
61	DCWELL2	981008	7.8	710	1.8	445	7.29	6.09	6.10	17.10	16.58	24.39	23.87	0.28536	0.27676	
62	DCWELL6	981010	7.1	731	5.6	483	7.92	6.41	6.42	8.88	8.61	16.80	16.53	0.14825	0.14371	
63	HSL-1	980602														anions only
64	HSL-2	980602														anions only
65	HSL-3	980604														anions only
66	LM-2	980604														anions only
67	55VIIIC-1	970000														C-isotopes
68	ASS	990608	7.1	182	4.9	117	1.92	5.44	5.40	20.08	21.83	22.00	23.75	0.33514	0.34857	
69	LBC	990608	7.0	214	4.5	128	2.10	5.37	5.38	25.81	24.98	27.90	27.08	0.43077	0.38896	
70	LBCS	990608	7.0	222	4.5	136	2.23	5.49	5.44	20.80	23.52	23.03	25.74	0.34720	0.36674	
71	RMCS	990608	7.1	246	4.1	153	2.51	5.43	5.43	26.87	26.86	29.37	29.36	0.44846	0.42719	
72	RMT	990908	47.0	860	0.3	517	8.47	6.67	6.50	3.58	5.34	12.05	13.81	0.16846	0.25112	
73	RMCS	990908	7.3	244	3.7	150	2.46	5.40	5.37	28.22	30.13	30.68	32.59	0.47111	0.50292	
74	LBC	990908	7.5	213	4.2	131	2.15	5.47	5.39	20.98	25.51	23.13	27.66	0.35019	0.42586	
75	ASS	990908	6.8	201	4.2	126	2.06	5.43	5.41	22.64	23.97	24.71	26.03	0.36454	0.38593	
76	SL	990908	17.7	276	5.2	170	2.79	6.04	6.06	6.24	5.99	9.02	8.77	0.14499	0.13919	
77	CH12W	990909	3.0	164	2.7	96	1.57	5.06	5.08	45.37	43.15	46.95	44.73	0.65344	0.62145	
78	BS	990910	12.4	234	7.7	132	2.16	7.14	7.19	0.41	0.36	2.57	2.53	0.00808	0.00719	
79	USC	990911	7.8	2420	0.2	1327	21.75	6.11	6.14	48.69	45.37	70.43	67.11	0.81266	0.75723	
80	DPP	990911	13.7	2370	0	1069	17.52	6.08	6.11	37.45	35.07	54.97	52.59	0.76739	0.71851	
81	LS	990911	11.8	118	4.5	45	0.74	8.96		0.00		0.74	0.69	0.00004		
82	ASS	20010820	7.0	199	4.5	124	2.03	5.47	5.43	20.36	23.45	22.39	25.49	0.33989	0.39150	
83	BS	20010820	12.2	248	7.3	138	2.26	7.22	7.26	0.36	0.34	2.62	2.60	0.00711	0.00679	
84	CTRAW	20010820	14.2	318	6.5	191	3.13	7.11	7.07	0.61	0.70	3.74	3.83	0.01284	0.01489	

Mammoth Mountain/Long Valley caldera

#	sample	date	in mg/L F	in mg/L Cl	in mg/L Br	in mg/L NO3	in mg/L PO4	in mg/L SO4	notes
1	1BE95	950606							
2	2BE95	950606							
3	3BE95	950606							
4	4BE95	950606							
5	6BE95	950928							
6	MMSA-1	951100							
7	MMSA-1	960801	<0.05	17.6	0.005	2.5	<0.02	4.3	
8	MMSA-2A	951102							
9	MMSA-2B	960801	0.148	5.7	0.003	1.93	<0.02	32.6	
10	LB-1	951017							
11	LB-1	960718							
12	BS	960805	0.44	5.9	0.013	0.02	0.38	7.4	
13	CH12S	960924	0.145	0.33	<0.01	0.07	<0.02	1.4	
14	CH15S	960924	0.096	1.08	0.009	<0.01	<0.02	8.8	
15	LS	960805	0.09	0.4	0.005	0.022	<0.02	16.7	
16	MIN	960805	<0.05	0.46	0.003	<0.01	<0.02	8.4	
17	MLS	960805	<0.05	33.3	0.006	4.4	<0.02	1.46	
18	MMSA-3	960801	0.056	3.4	0.006	1.64	<0.02	0.86	
19	RMCS	960802	0.07	0.28	0.004	<0.01	0.13	6.6	
20	RMR	960912	<0.05	0.16	0.002	0.133	0.05	0.8	
21	RMT	960802							
22	SL	960924	1.15	1.14	0.008	<0.01	<0.02	7.4	
23	TLS	960731	<0.05	0.4	0.003	<0.01	<0.02	1.9	
24	VSS	960805	0.134	0.46	0.005	<0.01	0.33	18.1	
25	HSL(18)	960717							
26	HSL-1	960718							
27	CH-11A	960718							
28	LBCS	970618	<0.2	na	<0.02	0.05	0.09	3.4	
29	HS	970616	<0.2	0.25	<0.02	<0.01	0.04	0.41	
30	Crestview	970616	0.56	2.6	0.01	0.06	0.44	7.1	
31	CH12S	970616	<0.2	na	<0.02	0.1	<0.02	1.16	
32	V72S	970820	<0.2	2.1	<0.02	0.102	<0.02	4.6	
33	LBCS	970822	<0.2	0.33	<0.02	<0.01	0.101	3.9	
34	lowest LBCS	970822							
35	avg LBCS	970822							
36	avg LBC	970822							
37	LBC (30 m)	970822							
38	LBC (70 m)	970822							
39	LBC (200 m)	970822							
40	LBC (at trail)	970822							
41	SJTAT	970822	<0.2	0.43	<0.02	0.054	0.138	2.9	
42	ASS	970822	<0.2	0.25	<0.02	0.019	0.094	2.9	
43	PDS	970823	0.37	0.23	<0.02	<0.01	0.065	6.6	
44	CH12S	970824	<0.2	0.27	<0.02	0.077	<0.02	1.68	
45	VSS	970823	<0.4	0.27	<0.04	0.072	0.29	19.4	
46	Twin L. in.	970910	<0.05	0.075	0.002	<0.01	<0.02	3.2	
47	Twin L. out.	970910	0.175	0.23	0.005	<0.01	0.31	3.4	
48	RMCS	970909							
49	Benioff Sp.	971000	<0.05	0.196	<0.02	<0.01	<0.02	0.105	
50	CH12S	980811	0.186	0.28	0.001	0.087	<0.02	1.28	
51	RMCS	980813	0.091	0.4	<0.02	<0.01	0.123	5.9	
52	LBCS	980813	0.124	0.4	0.003	<0.01	0.105	3.2	
53	LBC	980813	0.119	0.32	0.002	<0.01	0.1	3.1	
54	LBCN	980813	0.086	0.45	0.001	0.081	0.115	2.8	
55	ASS	980813	0.116	0.27	0.003	<0.01	0.093	2.9	
56	CTW-2	980811	0.25	4.2	0.014	<0.01	<0.02	7	
57	BS	980811	0.44	5	0.013	0.133	0.39	6.7	
58	CTRAW	980811	0.48	2.5	0.006	<0.01	0.42	6.8	
59	CCS	981006	0.5	0.21	0.003	<0.01	<0.02	1.1	
60	PSBBC	981007	0.086	0.69	<0.02	0.039	0.13	0.25	
61	DCWELL2	981008	0.22	4.2	0.002	1.19	0.137	21.3	
62	DCWELL6	981010	0.25	2.9	0.003	0.69	0.159	13.1	
63	HSL-1	980602	0.095	0.24	<0.02	0.041	<0.02	0.55	
64	HSL-2	980602	0.096	0.28	<0.02	<0.01	<0.02	0.55	
65	HSL-3	980604	0.106	0.28	<0.02	<0.01	<0.02	0.45	
66	LM-2	980604	0.05	0.23	<0.02	0.093	<0.02	3.8	
67	55VIIIIC-1	970000							
68	ASS	990608							
69	LBC	990608							
70	LBCS	990608							
71	RMCS	990608	0.07	0.36	<0.02	<0.01	0.123	5.9	
72	RMT	990908	4.1	6.4	0.014	<0.01	<0.02	30.9	
73	RMCS	990908	0.07	0.32	<0.02	0.03	0.12	7.2	
74	LBC	990908	0.112	0.34	<0.02	<0.01	0.114	3.9	
75	ASS	990908	0.115	0.3	<0.02	<0.01	0.089	3.1	
76	SLS	990908	1.12	1.09	<0.02	<0.01	<0.02	6.9	
77	CH12W	990909	0.27	0.99	<0.02	0.104	<0.02	6.2	
78	BS	990910	0.4	4.8	0.01	0.133	0.35	6.6	
79	USC	990911	2.2	209	0.39	0.12	<0.1	17.5	
80	DPP	990911	2.6	263	0.44	0.12	<0.1	31	
81	LS	990911	0.071	0.37	<0.02	0.137	<0.02	17.5	
82	ASS	20010820							
83	BS	20010820							
84	CTRAW	20010820							

Mammoth Mountain/Long Valley caldera

#	sample	date	δD SMOW	$\delta^{18}O$ SMOW	T TU	$\delta^{13}C$ values from SrCO ₃ method before 1998; from vacuum extraction of DIC in 1998 and later (unless otherwise noted)				
						$\delta^{13}C$ -DIC per mil PDB	¹⁴ C pmC	³ He/ ⁴ He (R/R _a) _c	+ or - ³ He/ ⁴ He	notes
1	1BE95	950606	-99	-12.70						
2	2BE95	950606	-94	-11.61						
3	3BE95	950606	-98	-13.47						
4	4BE95	950606	-122	-15.65						
5	6BE95	950928	-110	-15.14						
6	MMSA-1	951100				-6.4				
7	MMSA-1	960801	-105.6	-14.86	10.1	-5.87	3.8	4.49	0.32	
8	MMSA-2A	951102	-108.7	-15.09		-5.4				
9	MMSA-2B	960801	-109.1	-15.12	14.3	-7.05	5.1	4.19	0.62	
10	LB-1	951017	-107.2	-14.90	11.6	-9.2	38			
11	LB-1	960718	-107.7	-14.65		-8.5	29.5			
12	BS	960805	-114.4	-15.63		-8.4	41.5	2.20	0.52	He isotopes from 970616 sample;
13	CH12S	960924	-102.6	-14.50	9.2	-4.88	2.1			He and C isotopes from gas bubbles; SrCO ₃ gave -8.58
14	CH15S	960924	-107.5	-15.16		-9.87	11.3			sampled 960912
15	LS	960805	-124.9	-17.01		-12.1	64			
16	MIN	960805	-105.5	-14.93		-11.6	44			
17	MLS	960805	-105.2	-14.68		-5.05	2.2			
18	MMSA-3	960801	-110.0	-15.14		-22.5	112			
19	RMCS	960802	-14.80	-14.80	10.8	-6.1	1.3	3.06	0.54	He isotopes and SrCO ₃ of -4.37 from 970618 sample
20	RMR	960912	-106.7	-15.05	11.6	-12.4	84			
21	RMT	960802	-108.6	-15.15		-6.0	8.8			
22	SL	960924	-104.3	-14.82	9.9	-8.44	10.8	3.34	0.21	C isotopes from gas bubbles; SrCO ₃ gave -10.75; He isotopes from 970618
23	TLS	960731	-106.8	-14.44	6.5	-15.9	102			
24	VSS	960805	-107.5	-15.05	17.8	-5.9	3.1			
25	HSL(18)	960717	-98.3	-13.63						
26	HSL-1	960718	-100.7	-14.04	5.3	-4.5	1.9			
27	CH-11A	960718	-103.4	-14.58	7.5	-0.1	0.25			
28	LBCS	970618	-104.6	-14.68		-5.57	1.8			
29	HS	970616	-121.1	-16.31		-17.0	113.1			
30	Crestview	970616	-111.3	-14.76		-7.94	36.5			
31	CH12S	970616	-105.2	-14.76		-9.30		4.94	0.22	
32	V72S	970820	-103.4	-14.04		-1.47				
33	LBCS	970822	-105.1	-14.76		-6.25				
34	lowest LBCS	970822								
35	avg LBCS	970822								
36	avg LBC	970822								
37	LBC (30 m)	970822								
38	LBC (70 m)	970822								
39	LBC (200 m)	970822								
40	LBC (at trail)	970822								
41	SJTAT	970822	-104.2	-14.74		-5.41	1.1			C isotopes from gas bubbles; SrCO ₃ values are -6.65 and 3.0 pmC
42	ASS	970822	-106.1	-14.69		-5.00	4.3	0.40	0.17	C isotopes from DIC tube; SrCO ₃ value is -9.99
43	PDS	970823	-107.9	-14.70		-0.35	23.4			
44	CH12S	970824	-105.2	-14.68		-4.90				C isotopes from gas bubbles; -5.53 from DIC tube; -10.94 SrCO ₃
45	VSS	970823	-106.6	-14.95		-5.57	2.0	3.80	0.16	C isotopes from gas bubbles; SrCO ₃ gave -8.09
46	Twin L. in.	970910	-106.8	-14.68		-6.39	103.8			
47	Twin L. out.	970910	-104.1	-14.68		1.08	23.6			
48	RMCS	970909								
49	Benioff Sp.	971000								
50	CH12S	980811	-108.2	-14.97		-5.07		5.03	0.99	delta 13C = -4.50 in gas bubbles
51	RMCS	980813	-107.3	-14.88		-4.83		3.83	0.78	
52	LBCS	980813	-105.2	-14.72		-4.79	0.4	1.39	0.08	delta 13C = -4.84 in gas bubbles
53	LBC	980813	-104.8	-14.83		-5.05				
54	LBCN	980813	-104.7	-14.71		-4.59	0.6	1.82	0.13	delta 13C = -4.94 in gas bubbles
55	ASS	980813	-104.6	-14.76	13.1	-4.77		1.77	0.26	
56	CTW-2	980811	-122.9	-16.60	1.4	-13.81	70.8	2.72	0.12	He isotopic ratio 2.72 on 990304
57	BS	980811	-115.3	-15.76		-7.39		2.27	0.22	
58	CTRAW	980811	-111.8	-15.72	12.3			0.21	0.07	He isotopic ratio 0.17 on 990304
59	CCS	981006	-105.1	-14.61						
60	PSBBC	981007	-107.7	-14.61		-6.95				
61	DCWELL2	981008	-108.6	-15.01	16.7	-5.36	2.2			Tritium is average of 15.9 and 17.5
62	DCWELL6	981010	-108.4	-14.92	15.1	-5.37	4.7	4.20	0.90	Tritium is average of 16.0 and 14.2
63	HSL-1	980602								
64	HSL-2	980602								
65	HSL-3	980604								
66	LM-2	980604								
67	55V11C-1	970000				-1.35	11.3			
68	ASS	990608				-4.85				
69	LBC	990608				-4.86				
70	LBCS	990608				-4.92		4.01	3.55	
71	RMCS	990608	-108.5	-14.68		-4.81				
72	RMT	990908	-110.1	-14.68		-5.39				
73	RMCS	990908				-5.00		4.58	0.35	
74	LBC	990908				-4.86		3.75	0.21	
75	ASS	990908			11.3	-4.86		4.69	0.33	
76	SLS	990908				-5.71		2.91	0.05	
77	CH12W	990909				-5.31		3.76	0.13	C isotopes from gas bubbles -4.79
78	BS	990910			9.6	-7.33		3.22	0.26	
79	USC	990911	-111.0	-14.94		-3.32				C isotopes from gas bubbles -5.98
80	DPP	990911		-14.69		-4.79		0.48	0.10	C isotopes from gas bubbles -7.57; He isotopes from 900711
81	LS	990911			4.5	-11.63		0.06	0.11	He isotopes from 980813

Lassen area

#	sample	description (collected by)	date	Lat (NAD 83)	Long (NAD 83)	elev (m)	notes
1	SLLS	spring at base of landslide near soda lake	970805	40.47209	121.53779	2393	also called L97-7
2	Source Spr.	uppermost spring in drainage w/o Soda Lake	970805	40.47382	121.54230	2409	also called L97-8
3	Iron Spr.	iron spring in drainage w/o Soda Lake	970805	40.47411	121.54279	2399	also called L97-10
4	CO2 Spr.	gassy spring in drainage w/o Soda Lake	970805	40.47438	121.54300	2393	also called L97-9
5	Crescent Cliff Spr.	Spring at base of Crescent Cliff	970805	40.48436	121.52982	2326	also called L97-11
6	MMFS	stream from MMFSPR at trail crossing	970805	40.49657	121.53638	2088	
7	MTS	Spring 10 m below trail along Manzanita Creek	970805	40.49806	121.53634	2067	also called L97-12
8	OBS	Old Boundary Spr.	970806	40.52292	121.48122	1921	also called L97-13
9	Lost Crk.	Lost Creek downstream from orifice	970806	40.5094	121.4741	2030	also called L97-14
10	FRS	spr. on Flatiron Ridge above Drakesbad water tank	970807	40.4462	121.4086	1829	also called L97-19
11	L97-17	spr. on trail between Drake & Boiling Spr. Lakes (C. Janik)	970807	40.438	121.412	1771	
12	L97-18	source of 2nd stream across trail (C. Janik)	970807	40.438	121.402	1774	
13	L97-20	Summit Lake trail spr. (C. Janik)	970807	40.474	121.42	1987	
14	L97-21	Cold Boiling Lake (C. Janik)	970807	40.45587	121.48329	2268	
15	L97-22	Crumbaugh View Spr. (C. Janik)	970807	40.4532	121.4937	2774	
16	Lost Crk. Headwaters	Spring at head of Lost Creek	970909	40.4992	121.4874	2324	
17	MMFSPR	Manzanita mud flow spring	981020	40.49574	121.53367	2165	
18	EBMC	Spring at head of east branch Manzanita Creek	981020	40.50977	121.53208	2063	
19	MMFSPR	Manzanita mud flow spring	20000822	40.49574	121.53367	2165	
20	UKCV	Upper King's Creek spring	20000823	40.46766	121.47634	2307	
21	UHCS	Upper (west fork) Hat Creek spring	20000823	40.48822	121.47982	2300	

Lassen area		DIC														
#	sample	date	Temp. C	cond. µS/cm	diss. O ₂ mg/L	alkalinity mg/kg	HCO ₃ ⁻ mmol/kg	pH	pH (ex)	H ₂ CO ₃ mmol/kg	H ₂ CO ₃ (ex) mmol/kg	DIC mmol/kg	DIC (ex) mmol/kg	pCO ₂ atm	pCO ₂ (ex) atm	notes
1	SLLS	970805	4.2	53		10	0.16	6.11		0.40		0.57		0.00602		conductivity not temperature compensated
2	Source Spr.	970805	5.0	275		und.	und.	4.31		und.		und.		und.		conductivity not temperature compensated
3	Iron Spr.	970805	7.0	1090		506	8.29	5.91		29.42		37.71		0.49112		conductivity not temperature compensated
4	CO2 Spr.	970805	16.0	327		und.	und.	4.45		und.		und.		und.		conductivity not temperature compensated
5	Crescent Cliff Spr.	970805	3.0	17		und.	und.	6.54		und.		und.		und.		conductivity not temperature compensated
6	MMFS	970805	8	180		125	2.05	und.		und.		und.		und.		conductivity not temperature compensated
7	MTS	970805	4.5	166		107	1.75	6.01		5.42		7.17		0.08104		conductivity not temperature compensated
8	OBS	970806	6.5	98		62	1.02	6.62		0.72		1.74		0.01158		conductivity not temperature compensated
9	Lost Crk.	970806	7.2	67		37	0.61	und.		und.		und.		und.		conductivity not temperature compensated
10	FRS	970807	11.0	82		46	0.75	7.31		0.10		0.85		0.00186		conductivity not temperature compensated
11	L97-17	970807	und.	und.		37	0.61	und.		und.		und.		und.		
12	L97-18	970807	und.	und.		34	0.56	und.		und.		und.		und.		
13	L97-20	970807	und.	und.		30	0.49	und.		und.		und.		und.		
14	L97-21	970807	und.	und.		19	0.31	und.		und.		und.		und.		
15	L97-22	970807	und.	und.		19	0.31	und.		und.		und.		und.		
16	Lost Crk. Headwaters	970909														
17	MMFSPR	981020	4.1	229		119	1.95	5.62	5.60	14.79	15.47	16.74	17.42	0.22125	0.23135	
18	EBMC	981020	9.4	200		120	1.97	5.60	5.63	13.61	12.62	15.57	14.59	0.24368	0.22604	
19	MMFSPR	20000822	4.0	220		126	2.06				9.13		11.19		0.13647	DIC sample transferred from polyseal bottle
20	UKCV	20000823	2.7	102												DIC Sample weight not recorded
21	UHCS	20000823	3.3	146	8.9	83	1.36	5.65	5.69	10.18	9.69	11.54	11.05	0.14664	0.13958	lab pH; DIC sample transferred from polyseal bottle

Lassen area**ANIONS**

0	sample	date	in mg/L						notes
#			F	Cl	Br	NO3	PO4	SO4	
1	SLLS	970805							
2	Source Spr.	970805	<0.2	0.106	<0.02	0.087	<0.02	117	
3	Iron Spr.	970805							
4	CO2 Spr.	970805	<0.2	0.46	<0.02	<0.01	<0.02	164	
5	Crescent Cliff Spr.	970805							
6	MMFS	970805							
7	MTS	970805	<0.2	0.56	<0.02	0.036	<0.02	8.7	
8	OBS	970806	<0.2	0.21	<0.02	0.26	<0.02	2.7	
9	Lost Crk.	970806	<0.2	0.25	<0.02	0.167	<0.02	5.3	
10	FRS	970807	<0.2	0.157	<0.02	<0.01	<0.02	1.52	
11	L97-17	970807	<0.2	0.162	<0.02	<0.01	0.055	0.21	
12	L97-18	970807							
13	L97-20	970807							
14	L97-21	970807	<0.2	0.075	<0.02	0.015	<0.02	0.58	
15	L97-22	970807	<0.2	0.087	<0.02	<0.01	0.028	0.74	
16	Lost Crk. Headwaters	970909							
17	MMFSPR	981020	<0.05	1.01	<0.02	0.109	<0.02	17.3	
18	EBMC	981020	<0.05	0.52	<0.02	0.065	<0.02	7.0	
19	MMFSPR	20000822							
20	UKCV	20000823							
21	UHCS	20000823							

Lassen area

ISOTOPES

#	sample	date	δD SMOW	$\delta^{18}O$ SMOW	T TU	$\delta^{13}C$ -DIC per mil PDB	^{14}C pmC	$^3He/^4He$ (R/R _A)c	+ or - $^3He/^4He$	notes
1	SLLS	970805				-14.17				
2	Source Spr.	970805				-10.77				
3	Iron Spr.	970805				-8.68				delta-13C of CO2 in gas bubbles was -7.82
4	CO2 Spr.	970805				-12.31				
5	Crescent Cliff Spr.	970805								
6	MMFS	970805								
7	MTS	970805				-10.83				
8	OBS	970806				-19.36				delta-13C of CO2 in gas bubbles was -24.46
9	Lost Crk.	970806				-0.82				
10	FRS	970807				-16.03				
11	L97-17	970807				-13.61				
12	L97-18	970807				-14.52				
13	L97-20	970807				-19.37				
14	L97-21	970807				-10.40				
15	L97-22	970807				-12.98				DIC sample from 970908
16	Lost Crk. Headwaters	970909				-10.64				
17	MMFSPR	981020	-98.0			-8.66	1.5			
18	EBMC	981020	-99.4			-8.61	2.7			
19	MMFSPR	20000822								
20	UKCV	20000823				-14.30	52.4			
21	UHCS	20000823				-8.70	2.3			

Three Sisters area

#	sample	description (collected by)	date	Long UTM (1927)	Lat UTM (1927)	elev (m)
1	VH02BE01	Unnamed cold spring	20010709	592819	4883653	1746
2	VH03BE01	Hinton Creek	20010709	593062	4883341	1742
3	VH04BE01	Head of unnamed creek at rockfall	20010709	593309	4883654	1771
4	VH05BE01	Indian Holes Spring in lower meadow	20010710	591560	4882704	1483
5	VH06BE01	Separation Creek	20010710	592027	4883080	1525
6	VH07BE01	Indian Holes spring on hillside	20010710	591902	4883071	1525
7	VH08BE01	Cold spring near camp in Separation Meadows	20010711	592854	4883869	1737
8	VH09BE01	Unnamed cold spring	20010711	594494	4883597	1855
9	VH10BE01	Cold spring - upper end of Mesa Meadows	20010711	~595084	~4881289	1755
10	VH11BE01	Large discharge cold spring	20010712	~593783	~4881398	1687
11	VH20RM01	Cold spring low on Separation Cr. (B. Mariner)	20010712	~587650	~4881410	1110
12	VH21RM01	Cold spring low on Separation Cr. (B. Mariner)	20010712	~587600	~4881390	1110
13	VH22RM01	Separation Creek - foot bridge	20010712	~584723	~4881140	957
14	VH23KL01	Separation Creek at gaged site 0.1 mi. below bridge (Ken Lee)	20010725	584634	4881140	952
15	VH27BE01	Mt. Bachelor soda spring	20010715	~604552	~4876948	1800

Three Sisters area**ANIONS**

#	sample	date	in mg/L						notes
			F	Cl	Br	NO3	PO4	SO4	
1	VH02BE01	20010709	0.06	1.54	0.005	0.01	0.025	2.1	
2	VH03BE01	20010709	0.06	1.58	0.004	<0.01	0.018	2.9	
3	VH04BE01	20010709							
4	VH05BE01	20010710	0.22	20.5	0.056	<0.01	0.154	6.8	
5	VH06BE01	20010710	0.08	2.1	0.006	<0.01	0.057	2.1	
6	VH07BE01	20010710	0.20	7.4	0.020	<0.01	0.21	2.9	
7	VH08BE01	20010711	0.06	0.85	0.003	<0.01	0.057	1.03	
8	VH09BE01	20010711	0.06	2.2	0.006	<0.01	<0.01	4.1	
9	VH10BE01	20010711	0.36	7.0	0.021	<0.01	0.34	18	
10	VH11BE01	20010712	0.18	3.3	0.010	0.01	0.087	5.6	
11	VH20RM01	20010712	0.09	12.6	0.035	0.03	0.053	3.0	
12	VH21RM01	20010712	0.06	6.7	0.018	0.01	0.049	1.66	
13	VH22RM01	20010712	0.07	3.0	0.003	<0.01	0.072	1.62	
14	VH23KL01	20010725							
15	VH27BE01	20010715	0.32	5.3	0.013	<0.01	<0.01	16.7	

Three Sisters area ISOTOPES

#	sample	date	δD SMOW	$\delta^{18}O$ SMOW	T TU	$\delta^{13}C-DIC$ per mil PDB	^{14}C pmC	$^3He/^4He$ (R/R_A)c	+ or - $^3He/^4He$	notes
1	VH02BE01	20010709								
2	VH03BE01	20010709								
3	VH04BE01	20010709								
4	VH05BE01	20010710			3.1	-11.49	22.2	7.4		
5	VH06BE01	20010710								
6	VH07BE01	20010710			7.0	-9.72				
7	VH08BE01	20010711				-10.00				
8	VH09BE01	20010711				-9.30	5.85			
9	VH10BE01	20010711			5.4	-9.03	10.3	8.6		
10	VH11BE01	20010712			6.2	-11.43				
11	VH20RM01	20010712			0.2	-11.59				
12	VH21RM01	20010712								
13	VH22RM01	20010712								
14	VH23KL01	20010725								
15	VH27BE01	20010715				-9.84	1.11			

Hot Creek series

#	sample	description (collected by)	date	Lat (NAD 83)	Long (NAD 83)	elev (m)
1	HCA	Hot Crk. above thermal input (C. Farrar)	971022	37.6575	118.8317	2145
2	HCF	Hot Crk. at flume (C. Farrar)	971022	37.6689	118.8167	2119
3	HCA	Hot Crk. above thermal input (C. Farrar)	971119	37.6575	118.8317	2145
4	HCF	Hot Crk. at flume (C. Farrar)	971119	37.6689	118.8167	2119
5	MP24A-32	Casa Diablo well (C. Farrar)				
6	MBP-3	Casa Diablo well (C. Farrar)				
7	HCA	Hot Crk. above thermal input (C. Farrar)	971218	37.6575	118.8317	2145
8	HCF	Hot Crk. at flume (C. Farrar)	971218	37.6689	118.8167	2119
9	HC5L	Thermal Spr. (C. Farrar)	971218	37.6611	118.8281	2125
10	HCA	Hot Crk. above thermal input (C. Farrar)	980116	37.6575	118.8317	2145
11	HCF	Hot Crk. at flume (C. Farrar)	980116	37.6689	118.8167	2119
12	HC5L	Thermal Spr. (C. Farrar)	980116	37.6611	118.8281	2125
13	HCA	Hot Crk. above thermal input (C. Farrar)	980212	37.6575	118.8317	2145
14	HCF	Hot Crk. at flume (C. Farrar)	980212	37.6689	118.8167	2119
15	HC5L	Thermal Spr. (C. Farrar)	980212	37.6611	118.8281	2125
16	HCA	Hot Crk. above thermal input (C. Farrar)	980319	37.6575	118.8317	2145
17	HCF	Hot Crk. at flume (C. Farrar)	980319	37.6689	118.8167	2119
18	HC5L	Thermal Spr. (C. Farrar)	980319	37.6611	118.8281	2125
19	HCA	Hot Crk. above thermal input (C. Farrar)	980417	37.6575	118.8317	2145
20	HCF	Hot Crk. at flume (C. Farrar)	980417	37.6689	118.8167	2119
21	HC5L	Thermal Spr. (C. Farrar)	980417	37.6611	118.8281	2125
22	HCA	Hot Crk. above thermal input (C. Farrar)	980513	37.6575	118.8317	2145
23	HCF	Hot Crk. at flume (C. Farrar)	980513	37.6689	118.8167	2119
24	HC5L	Thermal Spr. (C. Farrar)	980513	37.6611	118.8281	2125
25	HCA	Hot Crk. above thermal input (C. Farrar)	980625	37.6575	118.8317	2145
26	HCF	Hot Crk. at flume (C. Farrar)	980625	37.6689	118.8167	2119
27	HC5L	Thermal Spr. (C. Farrar)	980625	37.6611	118.8281	2125
28	HCA	Hot Crk. above thermal input (C. Farrar)	980722	37.6575	118.8317	2145
29	HCF	Hot Crk. at flume (C. Farrar)	980722	37.6689	118.8167	2119
30	HCA	Hot Crk. above thermal input (C. Farrar)	980825	37.6575	118.8317	2145
31	HCF	Hot Crk. at flume (C. Farrar)	980825	37.6689	118.8167	2119
32	HC5L	Thermal Spr. (C. Farrar)	980825	37.6611	118.8281	2125
33	HCA	Hot Crk. above thermal input (C. Farrar)	980916	37.6575	118.8317	2145
34	HCF	Hot Crk. at flume (C. Farrar)	980916	37.6689	118.8167	2119
35	HC5L	Thermal Spr. (C. Farrar)	980916	37.6611	118.8281	2125
36	HCA	Hot Crk. above thermal input (C. Farrar)	981016	37.6575	118.8317	2145
37	HCF	Hot Crk. at flume (C. Farrar)	981016	37.6689	118.8167	2119
38	HC5L	Thermal Spr. (C. Farrar)	981016	37.6611	118.8281	2125
39	HCA	Hot Crk. above thermal input (C. Farrar)	981217	37.6575	118.8317	2145
40	HCF	Hot Crk. at flume (C. Farrar)	981217	37.6689	118.8167	2119
41	HC5L	Thermal Spr. (C. Farrar)	981217	37.6611	118.8281	2125
42	HCA	Hot Crk. above thermal input (C. Farrar)	990113	37.6575	118.8317	2145
43	HCF	Hot Crk. at flume (C. Farrar)	990113	37.6689	118.8167	2119
44	HC5L	Thermal Spr. (C. Farrar)	990113	37.6611	118.8281	2125
45	HCA	Hot Crk. above thermal input (C. Farrar)	990218	37.6575	118.8317	2145
46	HCF	Hot Crk. at flume (C. Farrar)	990218	37.6689	118.8167	2119
47	HC5L	Thermal Spr. (C. Farrar)	990218	37.6611	118.8281	2125
48	HCA	Hot Crk. above thermal input (C. Farrar)	990317	37.6575	118.8317	2145
49	HCF	Hot Crk. at flume (C. Farrar)	990317	37.6689	118.8167	2119
50	HC5L	Thermal Spr. (C. Farrar)	990317	37.6611	118.8281	2125
51	HCA	Hot Crk. above thermal input (C. Farrar)	990415	37.6575	118.8317	2145
52	HCF	Hot Crk. at flume (C. Farrar)	990415	37.6689	118.8167	2119
53	HC5L	Thermal Spr. (C. Farrar)	990415	37.6611	118.8281	2125
54	HCA	Hot Crk. above thermal input (C. Farrar)	990513	37.6575	118.8317	2145
55	HCF	Hot Crk. at flume (C. Farrar)	990513	37.6689	118.8167	2119
56	HC5L	Thermal Spr. (C. Farrar)	990513	37.6611	118.8281	2125
57	HCA	Hot Crk. above thermal input (C. Farrar)	990616	37.6575	118.8317	2145
58	HCF	Hot Crk. at flume (C. Farrar)	990616	37.6689	118.8167	2119
59	HC5L	Thermal Spr. (C. Farrar)	990616	37.6611	118.8281	2125
60	HCA	Hot Crk. above thermal input (C. Farrar)	990708	37.6575	118.8317	2145
61	HCF	Hot Crk. at flume (C. Farrar)	990708	37.6689	118.8167	2119
62	HC5L	Thermal Spr. (C. Farrar)	990708	37.6611	118.8281	2125
63	HCA	Hot Crk. above thermal input (C. Farrar)	990817	37.6575	118.8317	2145
64	HCF	Hot Crk. at flume (C. Farrar)	990817	37.6689	118.8167	2119
65	HC5L	Thermal Spr. (C. Farrar)	990817	37.6611	118.8281	2125
66	HCA	Hot Crk. above thermal input (C. Farrar)	990923	37.6575	118.8317	2145
67	HCF	Hot Crk. at flume (C. Farrar)	990923	37.6689	118.8167	2119
68	HC5L	Thermal Spr. (C. Farrar)	990923	37.6611	118.8281	2125
69	HCA	Hot Crk. above thermal input (C. Farrar)	991014	37.6575	118.8317	2145
70	HCF	Hot Crk. at flume (C. Farrar)	991014	37.6689	118.8167	2119
71	HC5L	Thermal Spr. (C. Farrar)	991014	37.6611	118.8281	2125
72						
73						
74						
75						
76						
77						
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Hot Creek series

ANIONS

in mg/L:

#	sample	date	F	Cl	Br	NO3	PO4	SO4
1	HCA	971022	0.2	4.6	<0.02	0.185	0.117	9.4
2	HCF	971022	1.83	41.4	0.115	0.131	0.084	25.1
3	HCA	971119	0.2	5	0.023	0.191	0.11	9.9
4	HCF	971119	1.86	42.5	0.109	0.139	0.059	25.8
5	MP24A-32		10.5	244	0.57	0.54	<0.1	104
6	MBP-3		10	222	0.48	<0.05	<0.1	100
7	HCA	971218	<0.2	5.1	0.03	0.24	0.124	10.3
8	HCF	971218	1.78	41.1	0.116	0.23	0.083	25.4
9	HC5L	971218	9.2	204	0.5	<0.04	<0.08	91
10	HCA	980116	0.2	5.3	<0.02	0.24	0.101	10.2
11	HCF	980116	1.76	38.6	0.1	0.21	0.081	25.6
12	HC5L	980116	10	206	0.45	<0.04	<0.08	97
13	HCA	980212	0.23	5.9	<0.02	0.3	0.114	10.5
14	HCF	980212	1.74	40.7	0.104	0.27	0.099	25.4
15	HC5L	980212	8.9	205	0.49	<0.01	<0.02	90
16	HCA	980319	0.24	6.4	<0.02	0.25	0.129	10.8
17	HCF	980319	1.83	41.9	0.122	0.21	0.118	26
18	HC5L	980319	9.4	206	0.47	<0.05	<0.1	90
19	HCA	980417	0.21	7.1	0.028	0.28	0.11	11.1
20	HCF	980417	1.76	41	0.106	0.21	0.092	25.5
21	HC5L	980417	9.4	208	0.49	<0.05	<0.1	90
22	HCA	980513	0.191	4.7	0.02	0.26	0.105	9.8
23	HCF	980513	1.52	33.8	0.086	0.22	0.069	22.1
24	HC5L	980513	9.6	210	0.47	0.07	<0.1	91
25	HCA	980625	0.099	1.74	<0.02	0.088	0.036	4.7
26	HCF	980625	0.54	11.7	0.037	0.089	0.053	9.3
27	HC5L	980625	9.6	210	0.52	0.05	<0.1	94
28	HCA	980722	0.102	1.48	<0.02	0.078	0.039	3.8
29	HCF	980722	0.54	11.2	0.029	0.078	0.053	8.2
30	HCA	980825	0.155	3.4	<0.02	0.145	0.072	7.3
31	HCF	980825	1.1	24.4	0.085	0.126	0.077	16.2
32	HC5L	980825	9.6	208	0.47	<0.05	<0.1	92
33	HCA	980916	0.183	3.9	<0.02	0.152	0.081	8
34	HCF	980916	1.17	26.8	0.066	0.147	0.067	17.7
35	HC5L	980916	9.6	209	0.46	<0.05	<0.1	92
36	HCA	981016	0.198	4.7	<0.02	0.166	0.087	9
37	HCF	981016	1.46	31.9	0.09	0.126	0.062	20.3
38	HC5L	981016	9.6	209	0.5	<0.05	<0.1	92
39	HCA	981217	0.188	4.6	<0.02	0.21	0.101	9.4
40	HCF	981217	1.54	34.6	0.086	0.21	0.081	22.2
41	HC5L	981217	9.4	208	0.47	<0.05	<0.1	90
42	HCA	990113	0.191	4.6	<0.02	0.23	0.119	10
43	HCF	990113	1.79	39.9	0.107	0.22	0.098	25
44	HC5L	990113	9.3	208	0.51	0.05	<0.1	90
45	HCA	990218	0.20	5.4	<0.02	0.22	0.094	10.2
46	HCF	990218	1.69	39.2	0.088	0.139	0.048	24.6
47	HC5L	990218	9.0	206	0.5	<0.05	<0.1	92
48	HCA	990317	0.192	5.0	<0.02	0.27	0.101	10.2
49	HCF	990317	1.74	40.1	0.121	0.178	0.092	25.1
50	HC5L	990317	9.3	210	0.52	<0.05	<0.1	95
51	HCA	990415	0.20	4.8	<0.02	0.187	0.076	10.1
52	HCF	990415	1.79	40.5	0.100	0.144	0.076	25.3
53	HC5L	990415	9.2	208	0.58	<0.05	<0.1	94
54	HCA	990513	0.163	3.3	<0.02	0.144	0.089	8.4
55	HCF	990513	1.43	31.9	0.089	0.097	0.066	20.6
56	HC5L	990513	9.2	206	0.49	<0.05	<0.1	90
57	HCA	990616	0.114	1.68	<0.02	0.058	0.044	5
58	HCF	990616	0.65	14.1	0.044	0.062	0.042	10.7
59	HC5L	990616	9.4	210	0.50	<0.05	<0.1	92
60	HCA	990708	0.155	2.9	<0.02	0.122	0.071	6.9
61	HCF	990708	1.14	25.7	0.069	0.108	0.055	16.6
62	HC5L	990708	9.4	210	0.52	0.07	<0.1	94
63	HCA	990817	0.188	4.1	<0.02	0.196	0.101	9.1
64	HCF	990817	1.6	35.6	0.093	0.192	0.09	22.7
65	HC5L	990817	9.2	208	0.50	0.08	<0.1	94
66	HCA	990923	0.20	5.00	<0.02	0.22	0.116	9.8
67	HCF	990923	1.8	40.7	0.115	0.21	0.089	25.3
68	HC5L	990923	9.2	208	0.52	0.09	<0.1	94
69	HCA	991014	0.20	5.00	<0.02	0.21	0.115	10
70	HCF	991014	1.86	42.8	0.117	0.194	0.096	26
71	HC5L	991014	9.2	208	0.54	0.16	<0.1	94