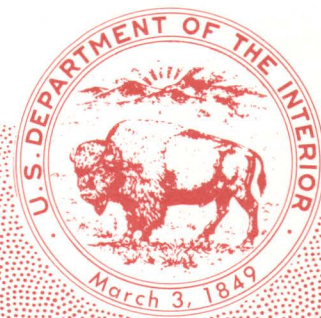


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**Catalogue of U.S. Geological Survey  
Strong-Motion Records, 1992**

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# **Catalogue of U.S. Geological Survey Strong-Motion Records, 1992**

*Compiled by* JOSEPHINE C. SWITZER *and* RONALD L. PORCELLA

**U.S. GEOLOGICAL SURVEY CIRCULAR 1114**

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## **PREFACE**

The first seismic engineering program in the United States was administered by the Seismological Field Survey (SFS) of the Coast and Geodetic Survey. This program was begun in 1931 and essentially remained the responsibility of the SFS until 1973, when the U.S. Geological Survey (USGS) assimilated the program into its Earthquake Hazards Reduction Program. Currently, the National Strong-Motion Program (NSMP) operates a cooperative network containing nearly 1000 accelerographs in 39 states and Puerto Rico. This network is administered by the USGS in cooperation with both private industry and numerous Federal, State, and local agencies and organizations. Major contributors include the Army Corps of Engineers, the Department of Veterans Affairs, and the Metropolitan Water District of Southern California. Primary objectives of the program are to record strong ground motions and the response of representative engineered structures during moderate to large earthquakes, and to disseminate the resultant data and information about the records, sites, and structures to the earthquake engineering research and design community.

This catalogue continues in a revised format the yearly publication "Strong-Motion Program Report, January-December [year]"; it is a continuation of the table 1 summary of accelerograms recovered at NSMP stations that had been published in that format since 1974. This report includes all accelerograms recovered during 1992. Unless otherwise noted, event data are from the "Preliminary Determination of Epicenters," published weekly by the U.S. Geological Survey.



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# Catalogue of U.S. Geological Survey Strong-Motion Records, 1992

*Compiled by Josephine C. Switzer and Ronald L. Porcella*

## INTRODUCTION

During January to December 1992 nearly 720 accelerograph records were recovered at stations operated by the U.S. Geological Survey's National Strong-Motion Program; approximately 50 percent of these records are from the main shocks of the June 28 Landers and Big Bear earthquakes in southern California. Nine earthquakes of  $M=5.0$  or greater occurred in California during 1992, including Landers, Big Bear, and the  $M_s=7.1$  Petrolia earthquake in northern California on April 25 (see table 1).

The Joshua Tree earthquake ( $M_L=6.1$ ) occurred in southern California on April 23, near the community of Desert Hot Springs; 47 records were recovered from this event, including a maximum acceleration of 0.52 g at Fun Valley (epicentral distance = 6 km). Additionally, five stations within a 30-km epicentral distance recorded peak accelerations from 0.12 to 0.41 g.

Within a 24-hour period on April 25-26, three earthquakes with magnitudes ( $M_s$ ) of 7.1, 6.6, and 6.6 occurred near Eureka in northern California. Each earthquake was recorded at eight USGS ground stations; peak accelerations were greater than 0.10 g at all recording stations. A maximum horizontal acceleration of 0.48 g was recorded at Centerville during the first event (epicentral distance = 22 km). Maximum ground accelerations recorded at USGS stations during the second and third events, respectively, were 0.44 g at Centerville Beach and 0.35 g at Ferndale.

USGS strong-motion instrumentation at 175 stations was triggered by two large earthquakes that occurred in the southern California county of San Bernardino on June 28: the  $M=7.4$  Landers earthquake occurred at 0458 PDT, approximately 10 km north of Yucca Valley; the  $M=6.5$  Big Bear earthquake occurred at 0804 PDT, approximately 10 km southeast of Big Bear Lake. Maximum recorded accelerations were 0.29 g at Indio during the Landers event, and 0.30 g at Forest Falls during the Big Bear event. Strong shaking during the Landers earthquake lasted 20 seconds or longer at several recording stations. USGS instrumentation triggered by the Landers event includes multiple- (9-24) channel systems located at 10 structures (one dam, one bridge, and eight large buildings) in the southern California region (see table 1).

Additional strong-motion records were recovered at USGS accelerograph stations located in Hawaii and Nevada during this report period.

Table 1. U.S. Geological Survey Accelerograph Records Recovered During 1992

[Station owners: ACOE, U.S. Army Corps of Engineers; BECH, Bechtel Power Corporation; MWD, Metropolitan Water District of Southern Calif.; OWNRR, Owner of building; TEMP, temporary station; USGS, U.S. Geological Survey; VA, U.S. Dept. of Veterans Affairs. Instrument trigger time in seconds after the minute or the following minute listed in earthquake column. S-minus trigger denotes S-wave-arrival-minus-trigger-time (S-t) or S-wave-minus-P-wave-arrival time (S-P, in brackets) interval. Direction is of case acceleration for upward trace deflection on accelerogram; horizontal directions are listed as azimuth, and vertical direction as "up" or "down." Maximum amplitude is peak acceleration recorded at ground level on one vertical and two orthogonal horizontal components unless otherwise noted. Duration is interval between first and last peaks of acceleration greater than 0.10 g. Numbers in parentheses refer to footnotes at end of table.]

Earthquake	Station Name (Owner)	Coordinates (Lat. ° N Long. ° W)	Trigger time	S-minus trigger (s)	Direction (az)	Maximum amplitude (g)	Duration (s)
23 March 1990- 31 January 1991 Southern Calif. Epicenter and magnitude unknown	Irvine 1990 MacArthur Blvd. (USGS)  Basement	33.656 117.859	(3)	0.2			
					060 Up 330	.05 .05 .03	--- --- ---
	Structure Array						
	Ch. 1 - Roof NE corner				060	.07	---
	Ch. 2 - Roof SW corner				060	.03	---
	Ch. 3 - 7th Floor NE				060	Inoperative	
	Ch. 4 - 7th Floor SW				060	Inoperative	
	Ch. 5 - 1st Floor South side				060	.08	---
	Ch. 6 - Roof, SW corner				330	.03	---
	Ch. 7 - 7th Floor, SW				330	Inoperative	
	Ch. 8 - 1st Floor West side				330	.04	---
	Ch. 9 - 1st Floor South side				330	.07	---
	Ch. 10 - 7th Floor SW corner				Down	Inoperative	
	Ch. 11 - 1st Floor West side				Down	Inoperative	
	Ch. 12 - 1st Floor South side				Down	.03	---
25 June 1990- 27 February 1991 Missouri Epicenter and magnitude unknown	Cape Girardeau (USGS)	37.31 89.52	(3)	(2)		(1)	
16 March 1991 xx29:20.1 G.m.t. Central Calif. Epicenter and magnitude unknown	Bear Valley Array #10 Webb Residence (USGS)	36.532 121.143	29:20.2	0.9	310 Up 220	.04 .03 .06	--- --- ---
24 March 1991 0342:08.8 G.m.t. Central Calif. 39.963N, 121.738W Magnitude 4.5 ML	Hollister Airport Differential Array (USGS)	36.888 121.413	42:19.1	0.9		(1)	

Table 1. U.S. Geological Survey Accelerograph Records Recovered During 1992—*Continued*

Earthquake	Station Name (Owner)	Coordinates (Lat. ° N Long. ° W)	Trigger time	S-minus trigger (s)	Direction (az)	Maximum amplitude (g)	Duration (s)
13 April 1991 2051:30.5 G.m.t. Eastern Calif. 37.563N, 118.888W Magnitude 3.3 ML	McGee Creek Crowley Lake (USGS) (Triaxial)	37.550 118.811	(4)	(2)		(1)	
	McGee Creek Crowley Lake (USGS) (Multichannel)	37.550 118.811	(4)	(2)			
	166 m Downhole					(1)	
	35 m Downhole					(1)	
	1 m Downhole					(1)	
	Surface					(1)	
5 January 1990- 16 April 1991 Southern Calif. Epicenter and magnitude unknown	Costa Mesa 2300 Placentia (USGS)	33.658 117.931	(3)	1.2	360 Up 270	.09 .07 .10	--- --- ---
26 April 1991 01xx G.m.t. Central Calif. Epicenter and magnitude unknown	Bear Valley Array #10 Webb Residence (USGS)	36.352 121.143	xx:09.5	0.7		(1)	
21 January 1992 1148:01.6 G.m.t. Hawaii 19.842N, 155.616W Magnitude 4.0 ML	Waimea, Hawaii Fire Station (USGS)	20.026 155.664	(4)	(2)		(1)	
	Mauna Kea, Hawaii State Park (USGS)	19.752 155.530	(4)	(2)		(1)	
8 March 1992 0343:04.4 G.m.t. Northern Calif. 40.228N, 124.290W Magnitude 5.3 ML	Eel River Valley Array Bunker Hill (USGS)	40.498 124.294	43:10.8	3.8		(1)	
	Eel River Valley Array Centerville Beach (USGS)	40.563 124.348	(3)	(2)		(1)	
	Eel River Valley Array Ferndale Fire Station (USGS)	40.576 124.262	(4)	6.3	360 Up 270	.09 .03 .07	--- --- ---
	Eel River Valley Array Fortuna Fire Station (USGS)	40.599 124.154	(4)	(2)		(1)	

Table 1. U.S. Geological Survey Accelerograph Records Recovered During 1992—*Continued*

Earthquake	Station Name (Owner)	Coordinates (Lat. ° N Long. ° W)	Trigger time	S-minus trigger (s)	Direction (az)	Maximum amplitude (g)	Duration (s)
8 March 1992 0343:04.4 G.m.t. (continued)	Eel River Valley Array College of the Redwoods (USGS)	40.699 124.200	(4)	(2)		(1)	
	Eel River Valley Array South Bay Union School (USGS)	40.735 124.207	(3)	(2)		(1)	
6 April 1992 0401:29.0 G.m.t. Nevada 39.670N, 119.820W Magnitude 4.1 ML	University of Nevada, Reno (USGS)  Basement	39.539 119.813	(4)	(2)		(1)	
9 April 1992 1558 G.m.t. Central Calif. Epicenter and magnitude unknown	Bear Valley Station 10 Webb Residence (USGS)	36.532 121.143	58:40.2	0.8	310 Up 220	.05 .02 .04	--- --- ---
10 April 1992 0945 G.m.t. Hawaii Epicenter and magnitude unknown	Waimea, Hawaii Fire Station (USGS)	20.026 155.664	(4)	(2)		(1)	
25 February 1992- 23 April 1992 (0450) Southern Calif. Epicenter and magnitude unknown	Fun Valley Reservoir 361 (USGS)  Whitewater Canyon Trout Farm (USGS)	33.925 116.389  33.989 116.655	(3)  (3)	(2)  4.2		(1)  (1)	
9 April 1992- 23 April 1992 (0450) Southern Calif. Epicenter and magnitude unknown	North Palm Springs Fire Station (USGS)	33.924 116.543	(3)	(2)		(1)	
23 April 1992 0450:23.2 G.m.t. Southern Calif. 33.961N, 116.318W Magnitude 6.1 ML (Joshua Tree earthquake)	Fun Valley Reservoir 361 (USGS)  Thousand Palms Post Office (USGS)	33.925 116.389  33.82 116.40	(3)  (3)	0.5  3.5	135 Up 045  135 Up 045	.53 .37 .50  .19 .24 .22	4.6 5.8 5.6  6.9 6.1 5.1

Note: Three additional records<sup>1</sup> recovered at Thousand Palms Post Office.

Table 1. U.S. Geological Survey Accelerograph Records Recovered During 1992—*Continued*

Earthquake	Station Name (Owner)	Coordinates (Lat. ° N Long. ° W)	Trigger time	S-minus trigger (s)	Direction (az)	Maximum amplitude (g)	Duration (s)
23 April 1992 (Joshua Tree earthquake, continued)	North Palm Springs Fire Station (USGS)	33.924 116.543	(3)	2.2	180 Up 090	.15 .10 .17	3.7 1 peak 3.8
	Indio Jackson Road (USGS)	33.747 116.214	50:28.8	4.1	180 Up 090	.20 .11 .41	4.1 4.6 5.3
	Morongo Valley Fire Station (USGS)	34.048 116.577	50:27.8	3.8	135 Up 045	.07 .10 .12	--- 1 peak 0.3
	Whitewater Canyon Trout Farm (USGS)	33.989 116.655	(3)	0.4	270 Up 180	.19 .17 .22	4.6 8.2 3.6
	Note: Two additional records <sup>1</sup> recovered at Whitewater Canyon Trout Farm.						
	Anza Array Pinyon Flat Observatory (USGS)	33.607 116.453	(3)	5.1	360 Up 270	.09 .05 .06	--- --- ---
	Anza Array Keenwild Forest Station (USGS)	33.707 116.716	(3)	(2)		(1)	
	Anza Array Herkey Creek Park (USGS)	33.676 116.680	(3)	5.4	135 Up 045	.05 .05 .07	--- --- ---
	Anza Array Rarick Springs (USGS)	33.568 116.510	50:31.3	(2)	360 Up 270	.08 .05 .07	--- --- ---
	Anza Array Garner Valley Fire Station (USGS)	33.616 116.627	50:31.2	6.1	360 Up 270	.05 .11 .05	--- 1 peak ---
	Anza Array Pine Meadow Ranch (USGS)	33.578 116.589	50:31.4	(2)	360 Up 270	.05 .08 .06	--- --- ---
	Mecca Fire Station (USGS)	33.572 116.076	(3)	5.5	270 Up 180	.09 .05 .13	--- --- 1 peak
	Anza Array Cranston Forest Station (USGS)	33.738 116.838	(3)	6.5	315 Up 225	.06 .06 .07	--- --- ---

Table 1. U.S. Geological Survey Accelerograph Records Recovered During 1992—*Continue<sup>1</sup>*

Earthquake	Station Name (Owner)	Coordinates (Lat. ° N Long. ° W)	Trigger time	S-minus trigger (s)	Direction (az)	Maximum amplitude (g)	Duration (s)
23 April 1992 (Joshua Tree earthquake, continued)	Anza Array Tripp Flats (USGS)	33.60 116.74	50:33.5	6.2		(1)	
	Forest Falls Post Office (USGS)	34.088 116.919	50:37.4	2.8		(1)	
	Anza Array San Jacinto Tunnel (USGS)	33.821 116.967	(3)	4.8		(1)	
	Anza Array, Tule Canyon (USGS)	33.47 116.64	50:34.1	7.8		(1)	
	Anza Array Cahuilla Valley (USGS)	33.512 116.798	50:35.8	6.7	360 Up 270	.05 .03 .04	--- --- ---
	Hinds Pumping Plant (MWD)	33.71 115.63	(3)	(2)		(1)	
	Mentone Fire Station (USGS)	34.067 117.117	50:38.5	6.8		(1)	
	Skinner Dam (MWD)	33.58 117.07	(3)	6.2			
	Left Abutment				178 Up 088	.05 .02 .04	--- --- ---
	Loma Linda VA Hospital (VA)	34.050 117.249	(3)				
	North Ground Site			8.5		(1)	
	South Ground Site			5.2		(1)	
	Building 1 Structure Array						
	Ch. 1- Ground Floor, Center				Down	.02	---
	Ch. 2- Ground Floor, Center				180	.03	---
	Ch. 3- Ground Floor, Center				270	.03	---
	Ch. 4- 4th Floor, Center				270	.08	---
	Ch. 5- Ground Floor, North				270	.03	---
	Ch. 6- 4th Floor, Center				180	.05	---
	Ch. 7- 4th Floor, North				270	.09	---
	Ch. 8- Ground Floor, South				180	.02	---
	Ch. 9- 4th Floor, South				270	.09	---

Table 1. U.S. Geological Survey Accelerograph Records Recovered During 1992—*Continued*

Earthquake	Station Name (Owner)	Coordinates (Lat. ° N Long. ° W)	Trigger time	S-minus trigger (s)	Direction (az)	Maximum amplitude (g)	Duration (s)
23 April 1992 (Joshua Tree earthquake, continued)	San Bernardino County Government Center (USGS)	34.106 117.287	(3)	(2)			
	Structure Array						
	Ch. 1- 2nd Floor Level, NW				360	.03	---
	Ch. 2- 2nd Floor Level, NE				090	.03	---
	Ch. 3- 2nd Floor Level, NE				360	.03	---
	Ch. 4- 2nd Floor Level, SW				090	.03	---
	Ch. 5- 4th Floor Level, SW				090	.05	---
	Ch. 6- 4th Floor Level, NW				360	.03	---
	Ch. 7- 6th Floor Level, (Roof) NE				090	.06	---
	Ch. 8- 6th Floor Level, (Roof) NW				360	.09	---
	Ch. 9- 6th Floor Level, (Roof) SW				090	.06	---
	Ch. 10- 6th Floor Level, (Roof) NE				360	.06	---
	Ch. 11- 4th Floor Level, NE				090	.03	---
	Ch. 12- 4th Floor Level, NE				360	.04	---
	Basement, SW						(1)
	Mills Filter Plant (MWD)	33.920 117.320	(3)	(2)			(1)
	San Bernardino Array, San Bernardino Valley College (USGS)	34.086 117.309	(3)	11.0			(1)
	San Bernardino Array North "F" Street (USGS)	34.183 117.295	50:54.5	(2)			(1)
	Riverside Santa Ana River Bridge (MWD)	33.968 117.447	(3)	(2)			
	North Abutment						(1)
	Structure Array						
	Ch. 1- North Abutment				345	.03	---
	Ch. 2- North Abutment				Down	.02	---
	Ch. 3- North Abutment				075	.03	---
	Ch. 4- Mid Span, Pier 7-8				345	.12	1 peak
	Ch. 5- Mid Span, Pier 7-8				Down	.11	0.3
	Ch. 6- Mid Span, Pier 7-8				075	.08	---
	Ch. 7- Pier 8, Below Isolator Bearing				345	.08	---
	Ch. 8- Pier 8, Below Isolator Bearing				Down	.02	---
	Ch. 9- Pier 8, Below Isolator Bearing				075	.04	---
	Ch. 10- Pier 8, Above Isolator Bearing				345	.13	1 peak
	Ch. 11- Pier 8, Above Isolator Bearing				Down	.03	---
	Ch. 12- Pier 8, Above Isolator Bearing				075	.08	---



Table 1. U.S. Geological Survey Accelerograph Records Recovered During 1992—*Continued*<sup>1</sup>

Earthquake	Station Name (Owner)	Coordinates (Lat. ° N Long. ° W)	Trigger time	S-minus trigger (s)	Direction (az)	Maximum amplitude (g)	Duration (s)
23 April 1992 (Joshua Tree earthquake, continued)	Lake Mathews (MWD)	33.852 117.451	(3)	(2)			
	Dike Toe					(1)	
	Prado Dam Corona (ACOE)	33.890 117.641	(3)	(2)			
	Crest					(1)	
	Downstream					(1)	
	San Antonio Dam Upland (ACOE)	34.157 117.676	(3)	(2)			
	Crest					(1)	
	Wrightwood Post Office (USGS)	34.360 117.629	(3)	(2)		(1)	
	Carbon Canyon Dam Brea (ACOE)	33.914 117.839	(3)	(2)			
	Crest					(1)	
	Brea Dam Fullerton (ACOE)	33.890 117.925	(3)	(2)			
	Crest					(1)	
	Left Abutment					(1)	
	Mill Creek Ranger Station (USGS)	34.390 118.080	(3)	5.5		(1)	
	Los Angeles 600 S. Commonwealth (OWNR) 19th Floor	34.063 118.284	(3)	(2)		(1)	
	Anza Array Chihuahua Valley (USGS)	33.38 116.68	(3)	(2)		(1)	
	Loma Linda Medical Center (USGS)	34.050 117.263	(3)	9.8		(1)	

Table 1. U.S. Geological Survey Accelerograph Records Recovered During 1992—Continued

Earthquake	Station Name (Owner)	Coordinates (Lat. ° N Long. ° W)	Trigger time	S-minus trigger (s)	Direction (az)	Maximum amplitude (g)	Duration (s)
23 April 1992 (Joshua Tree earthquake, continued)	Anza Array	33.348	(3)	7.5	360	.11	0.5
	Rancho de Anza	116.400			Up	.05	---
	(USGS)				270	.09	---
	Borrego Springs	33.21	50:51.1	(2)		(1)	
	Scripps Clinic	116.33					
	(USGS)						
	Los Angeles	34.053	(3)	16.8		(1)	
	333 S. Hope Street	118.252					
	(OWNR) 55th floor						
23 April, 0450 G.m.t.-	Fun Valley	33.925	(3)	(2)	135	.08	---
24 April 1992	Reservoir 361	116.389			Up	.04	---
Southern Calif.	(USGS)				045	.07	---
Epicenters and magnitudes unknown			(3)	1.1	135	.13	1 peak
					Up	.05	---
					045	.12	0.1
			(3)	1.4	135	.04	---
					Up	.02	---
					045	.05	---
			(3)	1.4	135	.04	---
					Up	.02	---
					045	.05	---
Note: Five additional records <sup>1</sup> recovered at Fun Valley Reservoir 361.							
25 April 1992	Eel River Valley Array	40.498	06:10.4	3.0	360	.21	4.0
1806:04.2 G.m.t.	Bunker Hill	124.294			Up	.08	---
Northern Calif.	(USGS)				270	.18	4.1
40.368N, 124.316W							
Magnitude 7.1 Ms	Eel River Valley Array	40.563	06:12.0	4.4	360	.48	11.3
(Petroia #1	Centerville Beach	124.348			Up	.13	3.7
earthquake)	(USGS)				270	.32	10.8
	Eel River Valley Array	40.576	(4)	2.9	360	.30	10.7
	Ferndale Fire Station	124.262			Up	.07	---
	(USGS)				270	.37	11.5
	Eel River Valley Array	40.599	(4)	4.7	360	.28	12.3
	Fortuna Fire Station	124.154			Up	.08	---
	(USGS)				270	.32	7.3
	Eel River Valley Array	40.644	(4)	5.6	360	.26	6.9
	Loleta Fire Station	124.219			Up	.13	5.8
	(USGS)				270	.26	9.9

Table 1. U.S. Geological Survey Accelerograph Records Recovered During 1992—*Continue*<sup>1</sup>

Earthquake	Station Name (Owner)	Coordinates (Lat. ° N Long. ° W)	Trigger time	S-minus trigger (s)	Direction (az)	Maximum amplitude (g)	Duration (s)
25 April 1992 ( <i>Petrolia</i> #1 earthquake, continued)	Eel River Valley Array	40.699	(4)	6.6	360	.17	8.0
	College of the Redwoods	124.200			Up	.08	---
	(USGS)				270	.15	8.2
	Eel River Valley Array	40.735	(3)	6.1	360	.20	6.8
	South Bay Union School	124.207			Up	.06	---
	(USGS)				270	.16	9.8
25 April 1992 1808 G.m.t. Northern Calif. Epicenter and magnitude unknown	Eel River Valley Array	40.78	06:18.0	7.3	060	.15	1.1
	Butler Valley Station 2	123.88			Up	.07	---
	(USGS)				330	.15	4.2
	Eel River Valley Array	40.576	(4)	(2)		(1)	
	Ferndale Fire Station	124.262					
	(USGS)						
25 April 1992 1812 G.m.t. Northern Calif. Epicenter and magnitude unknown	Eel River Valley Array	40.599	(4)	5.9	360	.07	---
	Fortuna Fire Station	124.154			Up	.03	---
	(USGS)				270	.08	---
	Eel River Valley Array	40.699	(4)	(2)		(1)	
	College of the Redwoods	124.200					
	(USGS)						
25 April 1992 1813 G.m.t. Northern Calif. Epicenter and magnitude unknown	Eel River Valley Array	40.78	08:35.3	(2)		(1)	
	Butler Valley Station 2	123.88					
	(USGS)						
	Eel River Valley Array	40.576	(4)	(2)		(1)	
	Ferndale Fire Station	124.262					
	(USGS)						
25 April 1992 1815 G.m.t. Northern Calif. Epicenter and magnitude unknown	Eel River Valley Array	40.599	(4)	(2)		(1)	
	Fortuna Fire Station	124.154					
	(USGS)						
	Eel River Valley Array	40.498	13:31.7	(2)		(1)	
	Bunker Hill	124.294					
	(USGS)						
25 April 1992 1815 G.m.t. Northern Calif. Epicenter and magnitude unknown	Eel River Valley Array	40.563	13:28.9	3.8		(1)	
	Centerville Beach	124.348					
	(USGS)						
	Eel River Valley Array	40.563	15:09.2	3.3		(1)	
	Centerville Beach	124.348					
	(USGS)						
25 April 1992 1815 G.m.t. Northern Calif. Epicenter and magnitude unknown	Eel River Valley Array	40.644	(4)	4.8		(1)	
	Loleta Fire Station	124.219					
	(USGS)						

Table 1. U.S. Geological Survey Accelerograph Records Recovered During 1992—*Continued*

Earthquake	Station Name (Owner)	Coordinates (Lat. ° N Long. ° W)	Trigger time	S-minus trigger (s)	Direction (az)	Maximum amplitude (g)	Duration (s)
25 April 1992 1833 G.m.t. Northern Calif. Epicenter and magnitude unknown	Eel River Valley Array Centerville Beach (USGS)	40.563 124.348	33:08.4	5.8		(1)	
26 April 1992 0741:39.7 G.m.t. Northern Calif. 40.415N, 124.603W Magnitude 6.6 Ms ( <i>Petrolia</i> #2 earthquake)	Eel River Valley Array Bunker Hill (USGS)	40.498 124.294	(3)	3.4	360 Up 270	.12 .06 .17	1.9 --- 4.7
	Eel River Valley Array Centerville Beach (USGS)	40.563 124.348	41:46.4	4.9	360 Up 270	.44 .09 .35	6.2 --- 7.9
	Eel River Valley Array Ferndale Fire Station (USGS)	40.576 124.262	(4)	5.8	360 Up 270	.18 .07 .26	5.6 --- 5.6
	Eel River Valley Array Fortuna Fire Station (USGS)	40.599 124.154	(4)	7.7	360 Up 270	.28 .07 .40	9.2 --- 7.3
	Eel River Valley Array Loleta Fire Station (USGS)	40.644 124.219	(4)	6.5	360 Up 270	.14 .15 .29	8.0 0.2 8.8
	Eel River Valley Array College of the Redwoods (USGS)	40.699 124.200	(4)	7.1	360 Up 270	.10 .05 .18	1 peak --- 2.0
	Eel River Valley Array South Bay Union School (USGS)	40.735 124.207	(3)	6.5	360 Up 270	.09 .02 .15	--- --- 3.2
	Eel River Valley Array Butler Valley Station 2 (USGS)	40.78 123.88	42:07.3	(2)	060 Up 330	.09 .03 .08	--- --- ---
26 April 1992 0745 G.m.t. Northern Calif. Epicenter and magnitude unknown	Eel River Valley Array Centerville Beach (USGS)	40.563 124.348	45:53.6	5.0		(1)	
26 April 1992 0752 G.m.t. Northern Calif. Epicenter and magnitude unknown	Eel River Valley Array Centerville Beach (USGS)	40.563 124.348	52:12.7	(2)		(1)	

Table 1. U.S. Geological Survey Accelerograph Records Recovered During 1992—*Continued*

Earthquake	Station Name (Owner)	Coordinates (Lat. ° N Long. ° W)	Trigger time	S-minus trigger (s)	Direction (az)	Maximum amplitude (g)	Duration (s)
26 April 1992 1118:25.7 G.m.t. Northern Calif. 40.378N, 124.575W Magnitude 6.6 Ms ( <i>Petrolia</i> #3 earthquake)	Eel River Valley Array	40.498	(3)	4.5	360	.13	1.1
	Bunker Hill	124.294			Up	.05	---
	(USGS)				270	.25	2.4
	Eel River Valley Array	40.563	18:33.4	2.2	360	.22	5.2
	Centerville Beach	124.348			Up	.12	5.0
	(USGS)				270	.24	3.8
	Eel River Valley Array	40.576	(4)	3.2	360	.17	2.5
	Ferndale Fire Station	124.262			Up	.08	---
	(USGS)				270	.35	3.2
	Eel River Valley Array	40.599	(4)	7.2	360	.22	3.6
	Fortuna Fire Station	124.154			Up	.07	---
	(USGS)				270	.25	3.1
	Eel River Valley Array	40.644	(4)	6.8	360	.08	---
	Loleta Fire Station	124.219			Up	.11	0.4
	(USGS)				270	.14	0.3
6 February 1992- 27 April 1992 Northern Calif. Epicenter and magnitude unknown	Eel River Valley Array	40.699	(4)	6.6	360	.09	---
	College of the Redwoods	124.200			Up	.03	---
	(USGS)				270	.16	0.3
	Eel River Valley Array	40.735	(3)	6.9	360	.12	1 peak
	South Bay Union School	124.207			Up	.03	---
	(USGS)				270	.12	1.0
	Eel River Valley Array	40.78	18:49.2	(2)	060	.08	---
	Butler Valley Station 2	123.88			Up	.03	---
	(USGS)				330	.07	---
	Black Butte Dam	39.82	(4)	(2)			
	(ACOE)	122.34					
	Right Abutment						(1)
	Downstream						(1)
	Upper Tower						(1)
	Lower Tower						(1)
	Crest						(1)
6 February 1992- 27 April 1992 Northern Calif. Epicenter and magnitude unknown	Eel River Valley Array	40.874	(3)	(2)	360	.06	---
	Humboldt State University	124.075			Up	.02	---
	(USGS)				270	.05	---

Table 1. U.S. Geological Survey Accelerograph Records Recovered During 1992—*Continued*

Earthquake	Station Name (Owner)	Coordinates (Lat. ° N Long. ° W)	Trigger time	S-minus trigger (s)	Direction (az)	Maximum amplitude (g)	Duration (s)
4 May 1992 1619:49.7 G.m.t. Southern Calif. 33.942N, 116.304W Magnitude 4.9 MD	Indio Jackson Road (USGS)	33.747 116.214	19:57.4	1.5	180 Up 090	.05 .04 .08	--- --- ---
25 April 1992- 18 May 1992 Southern Calif. Epicenter and magnitude unknown	Anza Array Herkey Creek Park (USGS)	33.676 116.680	(3)	5.5		(1)	
18 May 1992 1544:17.9 G.m.t. Southern Calif. 33.951N, 116.338W Magnitude 4.9 MD	Anza Array Herkey Creek Park (USGS)	33.676 116.680	44:31.1	(2)		(1)	
	Indio Jackson Road (USGS)	33.747 116.214	44:23.7	3.7	180 Up 090	.08 .02 .07	--- --- ---
24 April 1992- 4 June 1992 Southern Calif. Epicenters and magnitudes unknown	Fun Valley Reservoir 361 (USGS)	33.925 116.389	(3)	(2)	135 Up 045	.07 .02 .03	--- --- ---
			(3)	1.6	135 Up 045	.11 .07 .12	--- --- ---
			(3)	1.4	135 Up 045	.12 .07 .15	1 peak --- 0.2
			(3)	(2)	135 Up 045	.23 .10 .17	0.3 0.7 1.0
Note: Thirteen additional records <sup>1</sup> recovered at Fun Valley Reservoir 361.							
	Morongo Valley Fire Station (USGS)	34.048 116.577	(3)	3.9		(1)	
	North Palm Springs Fire Station (USGS)	33.924 116.543	(3)	0.4		(1)	
Note: Three additional records <sup>1</sup> recovered at North Palm Springs Fire Station.							
	Thousand Palms Post Office (USGS)	33.82 116.40	(3)	2.6	135 Up 045	.10 .04 .10	0.1 --- 1 peak

Table 1. U.S. Geological Survey Accelerograph Records Recovered During 1992—*Continued*

Earthquake	Station Name (Owner)	Coordinates (Lat. ° N Long. ° W)	Trigger time	S-minus trigger (s)	Direction (az)	Maximum amplitude (g)	Duration (s)
24 April 1992- 4 June 1992 (continued)			(3)	2.6	135 Up 045	.13 .09 .11	0.2 --- 1 peak
Note: Four additional records <sup>1</sup> recovered at Thousand Palms Post Office.							
	Whitewater Canyon Trout Farm (USGS)	33.989 116.655	(3)	(2)		(1)	
Note: Four additional records <sup>1</sup> recovered at Whitewater Canyon Trout Farm.							
5 June 1992 2146:41.9 G.m.t. Northern Calif. 40.273N, 124.552W Magnitude 4.8 ML	Eel River Valley Array Bunker Hill (USGS)	40.498 124.294	46:49.8	4.3		(1)	
	Eel River Valley Array Centerville Beach (USGS)	40.563 124.348	46:50.3	5.6	360 Up 270	.38 .04 .11	0.3 --- 1 peak
	Eel River Valley Array Ferndale Fire Station (USGS)	40.576 124.262	46:50.6	5.5	360 Up 270	.09 .03 .07	--- --- ---
	Eel River Valley Array Fortuna Fire Station (USGS)	40.599 124.154	46:52.0	3.9	360 Up 270	.07 .01 .07	--- --- ---
	Eel River Valley Array College of the Redwoods (USGS)	40.699 124.200	46:59.0	1.2		(1)	
	Eel River Valley Array South Bay Union School (USGS)	40.735 124.207	(3)	(2)		(1)	
10 December 1991- 17 June 1992 Central Calif. Epicenter and magnitude unknown	Bear Valley Station 12 Williams Residence (USGS)	36.658 121.249	(3)	2.2		(1)	
24 April 1992- 28 June 1992 Southern Calif. Epicenter and magnitude unknown	Anza Array Garner Valley Fire Station (USGS)	33.616 116.627	(3)	(2)		(1)	
Note: One additional record <sup>1</sup> recovered at Garner Valley Fire Station.							



Table 1. U.S. Geological Survey Accelerograph Records Recovered During 1992—*Continued*

Earthquake	Station Name (Owner)	Coordinates (Lat. ° N Long. ° W)	Trigger time	S-minus trigger (s)	Direction (az)	Maximum amplitude (g)	Duration (s)
28 June 1992 1157:34.1 G.m.t. Southern Calif. 34.201N, 116.436W Magnitude 7.6 Ms ( <i>Landers earthquake</i> )	Morongo Valley Fire Station (USGS)	34.048 116.577	57:39.6	3.4	135 Up 045	.16 .18 .22	13.2 26.2 21.9
	Morongo Valley Hall (Geos #58) (TEMP)	34.053 116.572			Up 360 090	.16 .18 .14	--- --- ---
	Morongo Valley Ballpark (Geos #62) (TEMP)	34.049 116.593			Up 360 090	.20 .18 .20	--- --- ---
	Whitewater Canyon Trout Farm (USGS)	33.989 116.655	(3)	2.8	270 Up 180	.12 .12 .12	18.5 17.9 17.8
	Fun Valley Reservoir 361 (USGS)	33.925 116.389	(3)	2.5	135 Up 045	.22 .10 .22	23.4 0.3 24.3
	North Palm Springs Fire Station (USGS)	33.924 116.543	(3)	3.5	180 Up 090	.14 .11 .14	3.0 1 peak 7.3
	North Palm Springs (Geos #80) (TEMP)	33.924 116.543			Up 360 090	.11 .13 .13	--- --- ---
	Mission Creek Fault Geos #57 (TEMP)	33.924 116.420			Up 360 090	.08 .12 .13	--- --- ---
	Thousand Palms Post Office (USGS)	33.82 116.40	(3)	6.1	135 Up 045	.12 .09 .10	0.1 --- 2 peaks
	Note: Three additional records <sup>1</sup> recovered at Thousands Palms Post Office.						
	Forest Falls Post Office (USGS)	34.088 116.919	57:46.4	5.1	300 Up 210	.10 .09 .12	1 peak --- 1.8
	Indio Jackson Road (USGS)	33.747 116.214	57:45.7	6.6	180 Up 090	.13 .08 .29	32.0 --- 26.9
	Anza Array Keenwild Forest Station (USGS)	33.707 116.716	(3)	4.0	360 Up 270	.03 .05 .03	--- --- ---

Table 1. U.S. Geological Survey Accelerograph Records Recovered During 1992—Continued

Earthquake	Station Name (Owner)	Coordinates (Lat. ° N Long. ° W)	Trigger time	S-minus trigger (s)	Direction (az)	Maximum amplitude (g)	Duration (s)
28 June 1992 (Landers earthquake, continued)	Anza Array	33.738	(3)	8.4	315	.05	---
	Cranston Forest Station	116.838			Up	.08	---
	(USGS)				225	.07	---
	Note: Two additional records <sup>1</sup> recovered at Cranston Forest Station.						
	Anza Array	33.676	(3)	7.9	135	.04	---
	Herkey Creek Park	116.680			Up	.03	---
	(USGS)				045	.06	---
	Mentone	34.067	57:49.8	8.5	315	.08	---
	Fire Station	117.117			Up	.09	---
	(USGS)				225	.08	---
	San Bernardino Array	34.080	(3)	6.8	360	.13	11.2
	Mill Creek Ranger Station	117.114			Up	.10	1 peak
	(USGS)				270	.14	13.0
	Anza Array	33.821	(3)	7.9	360	.07	---
	San Jacinto Tunnel,	116.967			Up	.06	---
	West Portal (USGS)				270	.05	---
	Note: One additional record <sup>1</sup> recovered at San Jacinto Tunnel, West Portal.						
	Anza Array	33.607	(3)	8.3	360	.04	---
	Pinyon Flat Observatory	116.453			Up	.04	---
	(USGS)				270	.05	---
	Note: Two additional records <sup>1</sup> recovered at Pinyon Flat Observatory.						
	San Bernardino Array	34.122	57:52.7	5.7	360	.06	---
	E. Highlands Plant #108	117.158			Up	.03	---
	(USGS)				270	.06	---
	Anza Array	33.616	57:49.2	8.1	360	.08	---
	Garner Valley Fire Station	116.627			Up	.09	---
	(USGS)				270	.09	---
	Anza Array	33.578	57:51.1	8.8	360	.05	---
	Pine Meadow Ranch	116.589			Up	.05	---
	(USGS)				270	.05	---
	Anza Array	33.568	57:51.5	6.0	360	.04	---
	Rarick Springs	116.510			Up	.03	---
	(USGS)				270	.05	---
	San Bernardino Array	34.136	57:51.5	7.9	315	.08	---
	Highland Fire Station	117.213			Up	.07	---
	(USGS)				225	.09	---

Table 1. U.S. Geological Survey Accelerograph Records Recovered During 1992—Continued

Earthquake	Station Name (Owner)	Coordinates (Lat. ° N Long. ° W)	Trigger time	S-minus trigger (s)	Direction (az)	Maximum amplitude (g)	Duration (s)	
28 June 1992 (Landers earthquake, continued)	Anza Array	33.60	57:51.9	7.3	360	.05	---	
	Tripp Flats	116.74			Up	.04	---	
	(USGS) (Triaxial)				270	.04	---	
	Anza Array	33.602			360	.04	---	
	Tripp Flats	116.755			Up	.04	---	
	(USGS) (Digital)				090	.05	---	
	Anza Array	33.630	(3)	2.1	360	.06	---	
	Red Mountain	116.847			Up	.03	---	
	(USGS)				270	.08	---	
	Anza Array	33.555	57:52.0	8.3		(1)		
	Anza Fire Station	116.661						
	(USGS)							
	Reche Canyon	34.004	(3)	7.2	330	.04	---	
	Olive Dell Ranch	117.223			Up	.03	---	
	(USGS)				240	.05	---	
Note: One additional record <sup>1</sup> recovered at Reche Canyon, Olive Dell Ranch.								
Loma Linda VA Hospital (VA)	34.050 117.249	(3)	8.3					
North Ground Site						360 Up 270	.08 .10 .09	--- 1 peak ---
South Ground Site						360 Up 270	.08 .05 .08	--- --- ---
Structure Array								
Ch. 1 - Ground floor center					Down	.04	---	
Ch. 2 - Ground floor center					180	.08	---	
Ch. 3 - Ground floor center					270	.08	---	
Ch. 4 - 4th floor center					270	.22	24.2	
Ch. 5 - Ground floor north					270	.10	2 peaks	
Ch. 6 - 4th floor center					180	.15	16.8	
Ch. 7 - 4th floor north					270	.27	26.7	
Ch. 8 - Ground floor south					180	.07	---	
Ch. 9 - 4th floor south					270	.23	23.2	
Note: One each additional record <sup>1</sup> recovered at Loma Linda VA north ground site and structural array.								
Loma Linda University Medical Center (USGS)	34.050 117.263	(3)	8.4	360	.10	1 peak		
				Up	.05	---		
				270	.09	---		

Table 1. U.S. Geological Survey Accelerograph Records Recovered During 1992—*Continued*

Earthquake	Station Name (Owner)	Coordinates (Lat. ° N Long. ° W)	Trigger time	S-minus trigger (s)	Direction (az)	Maximum amplitude (g)	Duration (s)
28 June 1992 (Landers earthquake, continued)	Mecca	33.572	(3)	12.1	270	.09	---
	Fire Station	116.076			Up	.03	---
	(USGS)				180	.07	---
	San Bernardino County Government Center	34.106 117.287	57:52.1	8.6			
	(USGS)						
	Basement, SW				090	.06	---
					Up	.07	---
					360	.09	---
	Structure Array						
	Ch. 1 - 2nd floor NW				360	.13	3.1
	Ch. 2 - 2nd floor NE				090	.10	2.3
	Ch. 3 - 2nd floor NE				360	.14	6.1
	Ch. 4 - 2nd floor SW				090	.09	---
	Ch. 5 - 4th floor SW				090	.21	19.3
	Ch. 6 - 4th floor NW				360	.17	16.6
	Ch. 7 - Roof (6th) NE				090	.28	21.2
	Ch. 8 - Roof (6th) NW				360	.34	31.3
	Ch. 9 - Roof (6th) SW				090	.26	21.8
	Ch. 10 - Roof (6th) NE				360	.36	29.1
	Ch. 11 - 4th floor NE				090	.17	12.5
	Ch. 12 - 4th floor NE				360	.26	27.8
	Ground Site		57:51.9	9.0	360	.06	---
					Up	.05	---
					270	.07	---
	San Bernardino Array	34.183	57:54.3	6.4	360	.12	3.6
	North "F" Street	117.295			Up	.09	---
	(USGS)				270	.12	0.5
	San Bernardino Array	34.086	(3)	9.5	360	.10	1 peak
	San Bernardino Valley	117.309			Up	.08	---
	College (USGS)				270	.11	1 peak
	Anza Array	33.512	(3)	9.9	360	.05	---
	Cahuilla Valley	116.798			Up	.04	---
	(USGS)				270	.08	---
	Anza Array	34.47	57:54.2	7.1	360	.05	---
	Tule Canyon	116.64			Up	.03	---
	(USGS)				270	.03	---
	San Bernardino Array	34.134	(3)	7.0	360	.06	---
	Rialto Fire Station	117.368			Up	.05	---
	(USGS)				270	.06	---

Table 1. U.S. Geological Survey Accelerograph Records Recovered During 1992—Continued

Earthquake	Station Name (Owner)	Coordinates (Lat. ° N Long. ° W)	Trigger time	S-minus trigger (s)	Direction (az)	Maximum amplitude (g)	Duration (s)
28 June 1992 (Landers earthquake, continued)	Mills Filter Plant (MWD)	33.920	(3)	7.8	360	.04	---
		117.320			Up	.03	---
					270	.05	---
Note: One additional record <sup>1</sup> recovered at Mills Filter Plant.							
	San Bernardino Array	34.235	(3)	10.2	360	.06	---
	Devore Water Department	117.407			Up	.07	---
	(USGS)				270	.06	---
	Skinner Dam	33.58	(3)	(2)			
	(MWD)	117.07					
	Left Abutment						
					178	.04	---
					Up	.03	---
					088	.05	---
	Structure Array						
	Ch. 1 - Center crest				180	.16	2.4
	Ch. 2 - Center crest				Up	.04	---
	Ch. 3 - Center crest				270	.11	1 peak
	Ch. 4 - Left crest				180	.09	---
	Ch. 5 - Left crest				270	.12	0.5
	Ch. 6 - Left slope				270	.08	---
	Ch. 7 - Center slope				180	.04	---
	Ch. 8 - Center slope				Up	.03	---
	Ch. 9 - Center slope				270	.06	---
	Ch. 10 - Center toe				180	.08	---
	Ch. 11 - Center toe				Up	.03	---
	Ch. 12 - Center toe				270	.06	---
	Hinds Pumping Plant	33.71	(3)	(2)	270	.05	---
	(MWD)	115.63			Up	.04	---
					180	.04	---
	Anza Array	33.38	57:55.8	9.5		(1)	
	Chihuahua Valley	116.68					
	(USGS)						
	Anza Array	33.348	(3)	(2)	360	.07	---
	Rancho de Anza	116.400			Up	.03	---
	(USGS)				270	.05	---
	Lytle Creek	34.251	(3)	11.2	360	.08	---
	Mt. Lakes Resort	117.490			Up	.04	---
	(USGS)				270	.08	---

Table 1. U.S. Geological Survey Accelerograph Records Recovered During 1992—*Continued*

Earthquake	Station Name (Owner)	Coordinates (Lat. ° N Long. ° W)	Trigger time	S-minus trigger (s)	Direction (az)	Maximum amplitude (g)	Duration (s)
28 June 1992 (Landers earthquake, continued)	Riverside	33.968	(3)	(2)			
	Santa Ana River Bridge (USGS/MWD)	117.447					
	North Abutment				166	.05	---
					Up	.04	---
					076	.03	---
	Structure Array						
	Ch. 1 - North abutment				346	.06	---
	Ch. 2 - North abutment				Down	.02	---
	Ch. 3 - North abutment				076	.02	---
	Ch. 4 - Pier 7-8, mid-span				346	.12	16.7
	Ch. 5 - Pier 7-8, mid-span				Down	.11	18.7
	Ch. 6 - Pier 7-8, mid-span				076	.10	0.5
	Ch. 7 - Pier 8, below bearing				346	.11	6.0
	Ch. 8 - Pier 8, below bearing				Down	.02	---
	Ch. 9 - Pier 8, below bearing				076	.02	---
	Ch. 10 - Pier 8 above bearing				346	.12	17.3
	Ch. 11 - Pier 8 above bearing				Down	.02	---
	Ch. 12 - Pier 8 above bearing				076	.02	---
	Lake Mathews Dam	33.852	(3)	8.5			
	(MWD)	117.451					
	Dike Toe				252	.05	---
					Up	.04	---
					162	.08	---
	Note: One additional record <sup>1</sup> recovered at Lake Mathews Dam, dike toe.						
	Borrego Springs	33.21	57:59.0	10.4		(1)	
	Scripps Clinic	116.33					
	(USGS)						
	San Antonio Dam	34.157	(3)	12.2			
	Upland	117.676					
	(ACOE)						
	Crest				090	.07	---
					Up	.04	---
					360	.14	0.6
	Downstream				090	.04	---
					Up	.02	---
					360	.05	---

Table 1. U.S. Geological Survey Accelerograph Records Recovered During 1992—*Continued*

Earthquake	Station Name (Owner)	Coordinates (Lat. ° N Long. ° W)	Trigger time	S-minus trigger (s)	Direction (az)	Maximum amplitude (g)	Duration (s)
28 June 1992 (Landers earthquake, continued)	Prado Dam Corona (ACOE)	33.890 117.641	(3)	7.6			
	Crest				090 Up 360	.06 .03 .08	--- --- ---
	Left Abutment				090 Up 360	.04 .04 .05	--- --- ---
	Downstream				090 Up 360	.09 .05 .08	--- --- ---
	Note: One additional record <sup>1</sup> recovered at Prado Dam downstream.						
	Iron Mountain Pumping Plant (MWD)	34.148 115.122	(3)	2.7		(1)	
	Live Oak Reservoir LaVerne (MWD)	34.140 117.749	(3)	(2)			
	Abutment					(1)	
	Weymouth Filter Plant LaVerne (MWD)	34.114 117.778	(3)	13.5			
	Ground Site				017 Up 287	.07 .03 .05	--- --- ---
	Tank Top				017 Up 287	.16 .15 .18	13.9 13.1 7.4
	Paradise Springs Camp USGS)	34.40 117.80	58:14.0	5.0		(1)	
	Diemer Filter Plant Yorba Linda (MWD)	33.913 117.819	(3)	(2)			
	Administration Building					(1)	



Table 1. U.S. Geological Survey Accelerograph Records Recovered During 1992—*Continued*

Earthquake	Station Name (Owner)	Coordinates (Lat. ° N Long. ° W)	Trigger time	S-minus trigger (s)	Direction (az)	Maximum amplitude (g)	Duration (s)
28 June 1992 (Landers earthquake, continued)	Reservoir Roof				281 Up 191	.07 .04 .06	--- --- ---
	Valyermo Forest Station (USGS)	34.44 117.85	(3)	15.9	300 Up 210	.08 .05 .08	--- --- ---
	Carbon Canyon Dam Brea (ACOE)	33.914 117.839	(3)	10.0			
	Crest				131 Up 041	.07 .03 .05	--- --- ---
	Left Abutment					(1)	
	Right Abutment				131 Up 041	.05 .03 .05	--- --- ---
	Orange County Reservoir Ground Level (MWD)	33.935 117.883	(3)	(2)		(1)	
	Brea Dam Fullerton (ACOE)	33.890 117.924	(3)	5.2			
	Crest				132 Up 042	.06 .04 .07	--- --- ---
	Downstream				132 Up 042	.05 .03 .03	--- --- ---
	Left Abutment				132 Up 042	.05 .03 .07	--- --- ---
	Santa Ana 400 Civic Center Dr. (USGS)	33.751 117.870	(3)	(2)	360 Up 270	.05 .03 .04	--- --- ---

Table 1. U.S. Geological Survey Accelerograph Records Recovered During 1992—Continued

Earthquake	Station Name (Owner)	Coordinates (Lat. ° N Long. ° W)	Trigger time	S-minus trigger (s)	Direction (az)	Maximum amplitude (g)	Duration (s)
28 June 1992 (Landers earthquake, continued)	Chantry Flat Forest Station (USGS)	34.196 118.021					
	Site 1				290 Up 020	.07 .06 .04	--- --- ---
	Site 2				290 Up 020	.06 .02 .07	--- --- ---
	Site 3				290 Up 020	.09 .04 .07	--- --- ---
	Costa Mesa John Wayne Airport (USGS)	33.677 117.869	(3)	2.7	360 Up 270	.06 .02 .05	--- --- ---
	Irvine 19900 MacArthur Blvd. (USGS)	33.656 117.859	(3)	16.8			
	Basement					(1)	
	Structure Array						
	Ch. 1 - Roof NE corner				060	.18	13.7
	Ch. 2 - Roof SW corner				060	.15	11.7
	Ch. 3 - 7th Floor NE				060	.11	8.9
	Ch. 4 - 7th Floor SW				060	.10	2.2
	Ch. 5 - 1st Floor South side				060	.05	---
	Ch. 6 - Roof, SW corner				330	.16	14.2
	Ch. 7 - 7th Floor, SW				330	.10	1 peak
	Ch. 8 - 1st Floor West side				330	.05	---
	Ch. 9 - 1st Floor South side				330	.04	---
	Ch. 10 - 7th Floor SW corner				Down	.08	---
	Ch. 11 - 1st Floor West side				Down	.04	---
	Ch. 12 - 1st Floor South side				Down	.03	---
	San Joaquin Reservoir (MWD)	33.620 117.842	(3)	(2)			
	Crest				087 Up 357	.06 .06 .10	--- --- 1 peak
	Left Abutment					(1)	
	Littlerock Post Office (USGS)	34.521 117.991	(3)	9.8	300 Up 210	.06 .05 .08	--- --- ---

Table 1. U.S. Geological Survey Accelerograph Records Recovered During 1992—Continued

Earthquake	Station Name (Owner)	Coordinates (Lat. ° N Long. ° W)	Trigger time	S-minus trigger (s)	Direction (az)	Maximum amplitude (g)	Duration (s)
28 June 1992 (Landers earthquake, continued)	Newport Beach	33.600	(3)	16.1	360	.07	---
	800 Marguerite	117.866			Up	.02	---
	(USGS)				270	.06	---
	Newport Beach	33.618	(3)	16.3			
	800-840 Newport Center Dr.	117.878					
	(USGS)						
	Structure Array						
	Ch. 1 - Tower 2 Level 1 Center				360	.04	---
	Ch. 2 - Tower 2 Level 1 Center				Up	.02	---
	Ch. 3 - Tower 2 Level 1 Center				090	.05	---
	Ch. 4 - Tower 2 Level 2 West				360	Inoperative	
	Ch. 5 - Middle Building Level 2				360	.04	---
	Ch. 6 - Middle Building Level 2				090	.08	---
	Ch. 7 - Tower 2, Level 9 South				090	.15	0.9
	Ch. 8-12					Inoperative	
	Whittier	33.977	(3)	16.3			
	7215 Bright Ave.	118.036					
	(OWNR/USGS)						
	Basement					(1)	
	5th Floor				180	.06	---
					Up	.03	---
					090	.07	---
	10th Floor				180	.08	---
					Up	.03	---
					090	.10	1.0
	Whittier Narrows Dam	34.020	(3)	10.1			
	Pico Rivera	118.053					
	(ACOE)						
	Crest				118	.06	---
					Up	.03	---
					028	.05	---
	Upstream (Baseyard)				118	.05	---
					Up	.02	---
					028	.05	---
	Costa Mesa Fire Station #4	33.658	(3)	3.5	360	.06	---
	2300 Placentia Ave.	117.931			Up	.03	---
	(USGS)				270	.03	---

Table 1. U.S. Geological Survey Accelerograph Records Recovered During 1992—*Continued*

Earthquake	Station Name (Owner)	Coordinates (Lat. ° N Long. ° W)	Trigger time	S-minus trigger (s)	Direction (az)	Maximum amplitude (g)	Duration (s)
28 June 1992 (Landers earthquake, continued)	Norwalk	33.915	(3)	12.3			
	12400 Imperial Highway (USGS/BECH)	118.067					
	South Ground Site				090	.06	---
					Up	.05	---
					360	.05	---
	Norwalk	33.917	58:13.3	9.9			
	12440 Imperial Highway (USGS/BECH)	118.066					
	Basement				090	.05	---
					Up	.03	---
					360	.04	---
	Structure Array 1						
	Ch. 1 - 9th Level(Roof) Center				090	.12	29.6
	Ch. 2 - 6th Level Center				090	.08	---
	Ch. 3 - 3rd Level Center				090	.04	---
	Ch. 4 - 2nd Level Center				090	.06	---
	Ch. 5 - 1st Level(Bsmt) East end				180	.06	---
	Ch. 6 - 6th Level West-center				180	.22	28.3
	Ch. 7 - 1st Level(Bsmt) Center				Up	.02	---
	Ch. 8 - 1st Level(Bsmt) Center				090	Inoperative	
	Ch. 9 - 1st Level(Bsmt) Center				180	.06	---
	Ch. 10 - Downhole (30') Center				Up	.02	---
	Ch. 11 - Downhole (30') Center				090	.05	---
	Ch. 12 - Downhole (30') Center				180	.04	---
	Structure Array 2						
	Ch. 13 - 9th Level Roof East end				180	.22	28.3
	Ch. 14 - 6th Level East end				180	.16	6.4
	Ch. 15 - 3rd Level East end				180	.10	1 peak
	Ch. 16 - 2nd Level East end				180	.07	---
	Ch. 17 - 9th Level Roof Bldg ctr				180	.24	32.4
	Ch. 18 - 6th Level Bldg Ctr				180	.21	27.8
	Ch. 19 - 3rd Level Bldg Ctr				180	.12	2 peaks
	Ch. 20 - 2nd Level Bldg Ctr				180	.06	---
	Ch. 21 - 9th Level Roof West end				180	.20	32.0
	Ch. 22 - 6th Level West end				180	.14	22.4
	Ch. 23 - 3rd Level West end				180	.08	---
	Ch. 24 - 2nd Level West end				180	.06	---
	North Ground Site	33.917	58:14.5	8.5	090	.07	---
		118.065			Up	.08	---
					360	.07	---

Table 1. U.S. Geological Survey Accelerograph Records Recovered During 1992—*Continued*

Earthquake	Station Name (Owner)	Coordinates (Lat. ° N Long. ° W)	Trigger time	S-minus trigger (s)	Direction (az)	Maximum amplitude (g)	Duration (s)
28 June 1992 (Landers earthquake, continued)	Garvey Reservoir Monterey Park (MWD)	34.048 118.111	(3)	6.0			
	Crest				114 Up 024	.04 .02 .05	--- --- ---
	Abutment Building					(1)	
	Alhambra 900 South Fremont Ave. (USGS)	34.085 118.149	58:21.3	4.0			
	Structure Array						
	Ch. 1 - 12th Floor Center				360	.09	---
	Ch. 2 - 12th Floor Center				090	.13	41.9
	Ch. 3 - 12th Floor North end				090	.12	41.1
	Ch. 4 - 6th Floor center				090	.07	---
	Ch. 5 - 6th Floor center				360	.06	---
	Ch. 6 - 6th Floor North end				090	.06	---
	Ch. 7 - 2nd Floor Center				090	.05	---
	Ch. 8 - 2nd Floor Center				360	.07	---
	Ch. 9 - 2nd Floor North end				090	.03	---
	Ch. 10 - Basement Center				360	.03	---
	Ch. 11 - Basement Center				Up	.03	---
	Ch. 12 - Basement Center				090	.04	---
	Palmdale Fire Station (USGS)	34.58 118.10	(3)	15.8	120 Up 030	0.07 0.03 0.06	--- --- ---
	Pasadena 535 S. Wilson Ave. (USGS)	34.149 118.172	(3)	8.4		(1)	
	Los Angeles Bulk Mail Facility (Bell) (USGS)	33.996 118.162	(3)	11.5	360 Up 270	.06 .02 .05	--- --- ---
	Long Beach VA Hospital (VA)	33.778 118.118	(3)	7.6			
	Basement					(1)	
	6th Floor				360 Up 270	.08 .02 .07	--- --- ---

Table 1. U.S. Geological Survey Accelerograph Records Recovered During 1992—*Continued*

Earthquake	Station Name (Owner)	Coordinates (Lat. ° N Long. ° W)	Trigger time	S-minus trigger (s)	Direction (az)	Maximum amplitude (g)	Duration (s)
28 June 1992 (Landers earthquake, continued)	11th Floor				360 Up 270	.12 .03 .12	1 peak --- 1.8
	Ground Site					(1)	
	Los Angeles	34.088	(4)	14.0	360	.06	---
	981 Montecito Dr.	118.201			Up	.03	---
	(USGS)				270	.05	---
	San Diego VA Hospital	32.87	(3)	(2)			
	Building 1	117.23					
	(VA)						
	Basement					(1)	
	Structure Array						
	Ch. 1 - 7th Level West end				360	.05	---
	Ch. 2 - 7th Level West central				360	.05	---
	Ch. 3 - 7th Level Center				360	.06	---
	Ch. 4 - 7th Level Center				090	.07	---
	Ch. 5 - 7th Level East central				360	.06	---
	Ch. 6 - 7th Level East end				090	.06	---
	Ch. 7 - 7th Level East end				360	.06	---
	Ch. 8 - 3rd Level East end				090	.03	---
	Ch. 9 - 3rd Level East end				360	.03	---
	Ch. 10 - Basement Center				Up	.02	---
	Ch. 11 - Basement Center				360	.02	---
	Ch. 12 - Basement Center				090	.02	---
	Los Angeles	34.052	(3)	17.5	120	.08	---
	255 E. Temple St.	118.237			Up	.05	---
	(OWNR) 21st level				030	.10	0.1
	Los Angeles	34.067	(3)	(2)			
	1111 Sunset Blvd.	118.248					
	(MWD)						
	Basement					(1)	
	4th floor				348 Up 258	.04 .02 .05	--- --- ---
	Roof (8)				348 Up 258	.09 .03 .09	--- --- ---

Table 1. U.S. Geological Survey Accelerograph Records Recovered During 1992—*Continued*

Earthquake	Station Name (Owner)	Coordinates (Lat. ° N Long. ° W)	Trigger time	S-minus trigger (s)	Direction (az)	Maximum amplitude (g)	Duration (s)
28 June 1992 (Landers earthquake, continued)	Los Angeles	34.053	(3)	19.0	083	.08	---
	333 S. Hope St.	118.252			Up	.07	---
	(OWNR) 55th floor				353	.08	---
Note: One additional record <sup>1</sup> recovered at 333 S. Hope, 55th floor.							
	Los Angeles	34.052	(3)	(2)			
	1100 Wilshire Blvd.	118.263					
	(USGS)						
	Basement 3 NE					(1)	
	Basement 3 SE					(1)	
	Basement 4 NW					(1)	
	Structure Array						
	Ch. 1 - 12th Floor North				298	.08	---
	Ch. 2 - 12th Floor North				208	.05	---
	Ch. 3 - 12th Floor South				208	.05	---
	Ch. 4 - 13th Floor North				298	.08	---
	Ch. 5 - 13th Floor North				208	.06	---
	Ch. 6 - 13th Floor South				208	.05	---
	Ch. 7 - 32nd Floor North				298	.08	---
	Ch. 8 - 32nd Floor North				208	.14	2.0
	Ch. 9 - 32nd Floor South				208	.06	---
	Ch. 10 - Ground Floor North				298	.02	---
	Ch. 11 - Ground Floor North				208	.03	---
	Ch. 12 - Ground Floor South				208	.02	---
	Los Angeles	34.063	(3)	17.3	028	.06	---
	600 S. Commonwealth Ave.	118.284			Up	.04	---
	(OWNR) 19th floor				298	.04	---
	Los Angeles	34.058	(3)	9.2	090	.13	3 peaks
	3000 Leeward Ave.	118.288			Up	.02	---
	(OWNR) Roof (13)				360	.10	1 peak
	Los Angeles	34.118	(3)	(2)		(1)	
	Griffith Park Observatory	118.299					
	(USGS)						
	Los Angeles	34.098	(3)	11.3	090	.09	---
	1526 N. Edgemont St.	118.249			Up	.03	---
	(OWNR) Roof (8)				360	.13	1 peak
	Los Angeles	34.060	(3)	19.5		(1)	
	695 S. Vermont Ave	118.290					
	(OWNR) 18th floor						



Table 1. U.S. Geological Survey Accelerograph Records Recovered During 1992—*Continued*

Earthquake	Station Name (Owner)	Coordinates (Lat. ° N Long. ° W)	Trigger time	S-minus trigger (s)	Direction (az)	Maximum amplitude (g)	Duration (s)
28 June 1992 ( <i>Landers earthquake, continued</i> )	Leona Valley Fire Station (USGS)	34.62 118.29	58:15.2	17.2	120 Up 030	.04 .03 .06	--- --- ---
	Los Angeles 2005 N. Highland Ave. (OWNR) Roof (8)	34.106 118.336	(3)	(2)		(1)	
	Los Angeles 4929 Wilshire Blvd. (OWNR) Roof (11)	34.063 118.337	(3)	6.3	180 Up 090	.10 .05 .16	2 peaks --- 34.5
	Note: One additional record <sup>1</sup> recovered at 4929 Wilshire Blvd., roof.						
	Los Angeles 19191 S. Vermont Ave. (OWNR) Roof (11)	33.855 118.291	(3)	6.5	360 Up 270	.10 .02 .11	1 peak --- 1.2
	Los Angeles 444 S. San Vicente (OWNR) Roof (12)	34.071	(3)	12.7	335 Up 245	.09 .04 .15	--- --- 6.8
	Los Angeles 5250 Century Blvd. (OWNR) Roof (8)	33.945 118.372	(3)	16.2	090 Up 360	.10 .03 .05	0.3 --- ---
	Palos Verdes Reservoir (MWD)	33.772 118.319	(3)	(2)			
	Abutment					(1)	
	Crest					(1)	
	Los Angeles 2121 Ave. of the Stars (OWNR) 36th level	34.057 118.414	(3)	21.5	300 Up 210	.09 .06 .13	--- --- 3.4
	Note: One additional record <sup>1</sup> recovered at 2121 Ave. of the Stars, 36th level.						
	Los Angeles 6101 Century Blvd. (OWNR) 15th level	33.946 118.391	(3)	14.0	270 Up 180	.07 .02 .12	--- --- 0.2
	Los Angeles 2029 Century Park East (OWNR) 43rd Floor	34.059 118.413	(3)	11.8	320 Up 230	.07 .04 .08	--- --- ---
	Los Angeles 2049 Century Park East (OWNR) 43rd Floor	34.058 118.412	(3)	21.5	320 Up 230	.06 .04 .09	--- --- ---

Table 1. U.S. Geological Survey Accelerograph Records Recovered During 1992—*Continued*

Earthquake	Station Name (Owner)	Coordinates (Lat. ° N Long. ° W)	Trigger time	S-minus trigger (s)	Direction (az)	Maximum amplitude (g)	Duration (s)
28 June 1992 ( <i>Landers earthquake, continued</i> )	Los Angeles	34.063	(3)	(2)	287	.05	---
	10550 Wilshire Blvd.	118.431			Up	.02	---
	(OWNR) Roof (14)				197	.08	---
	Los Angeles	34.062	(3)	4.5	250	.08	---
	10601 Wilshire Blvd.	118.433			Up	.02	---
	(OWNR) Roof (21)				160	.07	---
	Los Angeles	34.061	(3)	(2)	160	.11	1.6
	10660 Wilshire Blvd.	118.434			Up	.02	---
	(OWNR) Roof (19)				070	.11	7.6
	Los Angeles	34.040	(3)	5.3			
	1955 1/2 Purdue Ave.	118.445					
	(USGS)						
	Basement				235	.05	---
					Up	.02	---
					145	.03	---
	1st level				235	.05	---
					Up	.03	---
					145	.04	---
	3rd level				235	.05	---
					Up	.03	---
					145	.07	---
	Los Angeles	34.060	(3)	17.5	252	.09	---
	10751 Wilshire Blvd.	118.438			Up	.02	---
	(OWNR) Roof (12)				162	.09	---
	Los Angeles	34.044	(3)	8.1	226	.06	---
	12121 Wilshire Blvd.	118.467			Up	.03	---
	(OWNR) Roof (15)				136	.05	---
	Sepulveda VA Hospital	34.249	(3)	15.0		(1)	
	Building #40	118.475					
	(VA)						
	Jensen Filter Plant	34.312	(3)	14.2			
	Balboa Park	118.496					
	(MWD)						
	Administration Building				022	.07	---
	Basement				Up	.02	---
					292	.09	---
	Generator Building				022	.05	---
					Up	.02	---
					292	.05	---

Table 1. U.S. Geological Survey Accelerograph Records Recovered During 1992—*Continued*

Earthquake	Station Name (Owner)	Coordinates (Lat. ° N Long. ° W)	Trigger time	S-minus trigger (s)	Direction (az)	Maximum amplitude (g)	Duration (s)
28 June 1992 (Landers earthquake, continued)	Reservoir Roof				022 Up 292	.06 .03 .06	--- --- ---
	Gene Pumping Plant (MWD)	34.290 114.171	(3)	(2)		(1)	
	Isabella Auxiliary Dam (ACOE)	34.643 118.470					
	Left Abutment	35.642 118.463	(4)	(2)		(1)	
	Right Abutment	35.643 118.470	(4)	(2)		(1)	
	Left Crest	35.642 118.467	(4)	(2)	290 Up 200	.05 .02 .10	--- --- 1 peak
	Right Crest		(4)	(2)	290 Up 200	.06 .03 .05	--- --- ---
	Upper Tower	36.643 118.468	(4)	(2)	290 Up 200	.06 .03 .10	--- --- 1 peak
	Downstream	35.641 118.469	(4)	(2)	290 Up 200	.08 .02 .05	--- --- ---
	Lake Success Dam (ACOE)	36.061 118.920	(4)	(2)			
	Right Crest					(1)	
	Terminus Main Dam (ACOE)	36.420 119.000	(3)	(2)			
	Right Crest					(1)	
28 June 1992 1200 G.m.t. Southern Calif. Epicenter and magnitude unknown	Morongo Valley Fire Station (USGS)	34.048 116.577	00:50.3	2.0	135 Up 045	.07 .09 .08	--- --- ---
	Indio Jackson Road (USGS)	33.747 116.214	00:56.1	4.3	180 Up 090	.06 .03 .07	--- --- ---

Table 1. U.S. Geological Survey Accelerograph Records Recovered During 1992—*Continued*

Earthquake	Station Name (Owner)	Coordinates (Lat. ° N Long. ° W)	Trigger time	S-minus trigger (s)	Direction (az)	Maximum amplitude (g)	Duration (s)
23 June 1992 1201 G.m.t. Southern Calif. Epicenters and magnitudes unknown	Morongo Valley Fire Station (USGS)	34.048 116.577	01:18.8	(2)	135 Up 045	.04 .03 .06	--- --- ---
	Indio Jackson Road (USGS)	33.747 116.214	01:23.8	7.9	180 Up 090	.08 .02 .08	--- --- ---
	San Bernardino County Government Center (USGS)	34.106 117.287	01:02.3	9.1			
	Basement		01:02.2	10.3		(1)	
	Structure Array Ch. 1-12					(1)	
	Morongo Valley Fire Station (USGS)	34.048 116.577	08:09.0	2.1		(1)	
	Morongo Valley Fire Station (USGS)	34.048 116.577	14:29.5	(2)		(1)	
23 June 1992 1218 G.m.t. Southern Calif. Epicenter and magnitude unknown	Forest Falls Post Office (USGS)	34.088 116.919	18:58.3	(2)		(1)	
23 June 1992 1236:40.6 G.m.t. Southern Calif. 34.139N, 116.431W Magnitude 5.1 MD	Morongo Valley Fire Station (USGS)	34.048 116.577	36:44.9	2.3	135 Up 045	.04 .05 .07	--- --- ---
	Morongo Valley Fire Station (USGS)	34.048 116.577	44:02.6	2.4		(1)	
	Note: One additional record <sup>1</sup> recovered at Morongo Valley Fire Station.						

Table 1. U.S. Geological Survey Accelerograph Records Recovered During 1992—*Continued*

Earthquake	Station Name (Owner)	Coordinates (Lat. ° N Long. ° W)	Trigger time	S-minus trigger (s)	Direction (az)	Maximum amplitude (g)	Duration (s)
28 June 1992 1409:28.8 G.m.t. Southern Calif. 34.111N, 116.646W Magnitude 4.1 ML	Morongo Valley Fire Station (USGS)	34.048 116.577	09:33.5	(2)		(1)	
28 June 1992 1443:21.0 G.m.t. Southern Calif. 34.163 N, 116.855W Magnitude 5.4 Ms ( <i>Landers aftershocks</i> )	Morongo Valley Fire Station (USGS)	34.048 116.577	43:28.0	3.3	135 Up 045	.05 .05 .06	--- --- ---
	Forest Falls Post Office (USGS)	34.088 116.919	43:24.6	2.0	300 Up 210	.20 .11 .20	0.7 0.4 1.0
	Forest Falls Post Office (USGS)	34.088 116.919	[43:54.2]	[2.3]	300 Up 210	.07 .05 .07	--- --- ---
	Anza Array Garner Valley Fire Station (USGS)	33.616 116.627	43:33.6	7.6		(1)	
	San Bernardino Array Highland Fire Station (USGS)	34.136 117.213	43:33.2	(2)		(1)	
	Mentone Fire Station (USGS)	34.067 117.117	43:27.3	3.8		(1)	
	San Bernardino Array E. Highlands Plant #108 (USGS)	34.122 117.158	43:31.8	(2)		(1)	
	San Bernardino Array North "F" Street (USGS)	34.183 117.295	43:34.8	(2)		(1)	
	Anza Array Herkey Creek Park (USGS)	33.676 116.680	43:41.7	(2)		(1)	
	San Bernardino County Government Center (USGS)	34.106 117.287	43:29.3	5.6			
	Basement					(1)	
	Structure Array Ch. 1-12					(1)	
	Ground Site					(1)	

Table 1. U.S. Geological Survey Accelerograph Records Recovered During 1992—*Continued*

Earthquake	Station Name (Owner)	Coordinates (Lat. ° N Long. ° W)	Trigger time	S-minus trigger (s)	Direction (az)	Maximum amplitude (g)	Duration (s)		
28 June 1992 1443:21.0 G.m.t. (Landers aftershocks, continued)	Anza Array Pine Meadow Ranch (USGS)	33.578 116.589	43:35.0	7.6		(1)			
	Anza Array Chihuahua Valley (USGS)	33.38 116.68	43:38.7	(2)		(1)			
28 June 1992 1159-1505 G.m.t. Southern Calif. Epicenters and magnitudes unknown	Fun Valley Reservoir 361 (USGS)	33.925 116.389	(3)	2.2	135 Up 045	.11 .08 .09	2.7 --- ---		
			[3]	[2.5]	135 Up 045	.12 .07 .10	0.6 --- 1 peak		
			(3)	(2)	135 Up 045	.07 .03 .08	--- --- ---		
			Note: Four additional records <sup>1</sup> recovered at Fun Valley Reservoir 361.						
			Whitewater Canyon Trout Farm (USGS)	33.989 116.655	(3)	3.7	270 Up 180	.08 .05 .06	--- --- ---
							[3]	[2]	270 Up 180
(3)	4.1	270 Up 180					.12 .06 .09	1 peak --- ---	
Note: Eight additional records <sup>1</sup> recovered at Whitewater Canyon Trout Farm.									
	San Bernardino Array Mill Creek Ranger Station (USGS)	34.080 117.114	(3)	3.9	360 Up 270	.06 .06 .06	--- --- ---		
					Note: Two additional records <sup>1</sup> recovered at Mill Creek Ranger Station.				
					North Palm Springs Fire Station (USGS)	33.924 116.543	(3)	1.8	180 Up 090
[3]	[2]	180 Up 090	.05 .04 .07	--- --- ---					

Table 1. U.S. Geological Survey Accelerograph Records Recovered During 1992—*Continued*

Earthquake	Station Name (Owner)	Coordinates (Lat. ° N Long. ° W)	Trigger time	S-minus trigger (s)	Direction (az)	Maximum amplitude (g)	Duration (s)
28 June 1992 1159-1505 G.m.t. (continued)			(3)	4.9	180 Up 090	.04 .02 .06	--- --- ---
			(3)	5.3	180 Up 090	.05 .03 .06	--- --- ---
Note: Six additional records <sup>1</sup> recovered at North Palm Springs Fire Station.							
28 June 1992 1504:51.4 G.m.t. Southern Calif. 34.163N, 116.827W Magnitude 4.4 ML	Morongo Valley Fire Station (USGS)	34.048 116.577	04:56.9	(2)		(1)	
	Forest Falls Post Office (USGS)	34.088 116.919	04:57.1	(2)		(1)	
	Mentone Fire Station (USGS)	34.067 117.117	05:01.8	(2)		(1)	
28 June 1992 1505:30.7 G.m.t. Southern Calif. 34.203N, 116.827W Magnitude 6.7 Ms (Big Bear earthquake)	Forest Falls Post Office (USGS)	34.088 116.919	05:33.7	1.6	300 Up 210	.26 .30 .26	11.9 12.2 12.0
	Whitewater Canyon Trout Farm (USGS)	33.989 116.655	(3)	(2)	270 Up 180	.21 .21 .22	10.9 11.2 9.0
Note: Four additional records <sup>1</sup> recovered at Whitewater Canyon Trout Farm.							
	Morongo Valley Fire Station (USGS)	34.048 116.577	05:35.7	(2)	135 Up 045	.12 .20 .14	1.6 8.7 9.1
	San Bernardino Array Mill Creek Ranger Station (USGS)	34.080 117.114	05:35.6	3.7	360 Up 270	.23 .23 .20	8.5 7.8 7.1
	Mentone Fire Station (USGS)	34.067 117.117	05:36.6	5.6	315 Up 225	.09 .11 .08	--- 1 peak ---
	San Bernardino Array E. Highlands Plant #108 (USGS)	34.122 117.158	05:37.2	4.7	360 Up 270	.07 .08 .07	--- --- ---
	San Bernardino Array Highland Fire Station (USGS)	34.136 117.213	05:37.9	5.6	315 Up 225	.12 .07 .17	2 peaks --- 7.4

Table 1. U.S. Geological Survey Accelerograph Records Recovered During 1992—Continued

Earthquake	Station Name (Owner)	Coordinates (Lat. ° N Long. ° W)	Trigger time	S-minus trigger (s)	Direction (az)	Maximum amplitude (g)	Duration (s)
28 June 1992 (Big Bear earthquake, continued)	North Palm Springs	33.924	(3)	5.0	180	.12	4.0
	Fire Station	116.543			Up	.12	2.3
	(USGS)				090	.14	7.8
Note: Two additional records <sup>1</sup> recovered at North Palm Springs Fire Station.							
	Anza Array, West Portal	33.821	(3)	5.7	360	.08	---
	San Jacinto Tunnel	116.967			Up	.07	---
	(USGS)				270	.05	---
Note: Three additional records <sup>1</sup> recovered at West Portal, San Jacinto Tunnel.							
	Reche Canyon	34.004	(3)	6.3	330	.05	---
	Olive Dell Ranch	117.223			Up	.04	---
	(USGS)				240	.05	---
	Loma Linda VA Hospital	34.050	(3)	5.1			
	(VA)	117.249					
	North Ground Site				360	.09	---
					Up	.08	---
					270	.09	---
Note: One additional record <sup>1</sup> recovered at Loma Linda VA Hospital, North Ground Site.							
	South Ground Site				360	.09	---
					Up	.07	---
					270	.09	---
	Structure Array						
	Ch. 1 - Ground floor center				Down	.06	---
	Ch. 2 - Ground floor center				180	.08	---
	Ch. 3 - Ground floor center				270	.09	---
	Ch. 4 - 4th floor center				270	.20	13.5
	Ch. 5 - Ground floor north				270	.09	---
	Ch. 6 - 4th floor center				180	.16	9.3
	Ch. 7 - 4th floor north				270	.24	15.6
	Ch. 8 - Ground floor south				180	.09	---
	Ch. 9 - 4th floor south				270	.21	12.8
	Loma Linda University	34.050	(3)	6.9	360	.06	---
	Medical Center	117.263			Up	.06	---
	(USGS)				270	.07	---
	San Bernardino	34.106	05:39.3	0.7			
	County Government Center	117.287					
	(USGS)						
	Basement, SW				090	.08	---
					Up	.07	---
					360	.10	1 peak



Table 1. U.S. Geological Survey Accelerograph Records Recovered During 1992—Continued

Earthquake	Station Name (Owner)	Coordinates (Lat. ° N Long. ° W)	Trigger time	S-minus trigger (s)	Direction (az)	Maximum amplitude (g)	Duration (s)
28 June 1992 (Big Bear earthquake, continued)	Structure Array						
	Ch. 1 - 2nd floor NW				360	0.11	1 peak
	Ch. 2 - 2nd floor NE				090	0.10	1.9
	Ch. 3 - 2nd floor NE				360	0.10	6.8
	Ch. 4 - 2nd floor SW				090	0.09	---
	Ch. 5 - 4th floor SW				090	0.18	14.3
	Ch. 6 - 4th floor NW				360	0.11	7.9
	Ch. 7 - Roof (6th) NE				090	0.25	17.5
	Ch. 8 - Roof (6th) NW				360	0.29	20.1
	Ch. 9 - Roof (6th) SW				090	0.20	17.8
	Ch. 10 - Roof (6th) NE				360	0.33	20.7
	Ch. 11 - 4th floor NE				090	0.11	7.6
	Ch. 12 - 4th floor NE				360	0.22	17.8
Note: One each additional record <sup>1</sup> recovered at San Bernardino County Government Center, basement and structural array.							
	Ground Site		05:39.2	2.3	360 Up 270	.07 .06 .06	--- --- ---
	San Bernardino Array	34.183	05:39.6	5.7	360	.11	2 peaks
	North "F" Street	117.295			Up	.06	---
	(USGS)				270	.10	1 peak
	San Bernardino Array	34.086	(3)	4.8	360	.10	1 peak
	San Bernardino Valley	117.309			Up	.09	---
	College (USGS)				270	.12	6.6
	Anza Array	33.738	(3)	6.9	315	.07	---
	Cranston Forest Station	116.838			Up	.09	---
	(USGS)				225	.09	---
Note: One additional record <sup>1</sup> recovered at Cranston Forest Station.							
	Fun Valley	33.925	(3)	3.9	135	.12	1 peak
	Reservoir 361	116.389			Up	.07	---
	(USGS)				045	.11	1.6
	Anza Array	33.707	(3)	4.0	360	.04	---
	Keenwild Forest Station	116.716			Up	.08	---
	(USGS)				270	.05	---
	Mills Filter Plant	33.920	(3)	6.5	360	.06	---
	(MWD)	117.320			Up	.05	---
					270	.07	---

Table 1. U.S. Geological Survey Accelerograph Records Recovered During 1992—*Continued*

Earthquake	Station Name (Owner)	Coordinates (Lat. ° N Long. ° W)	Trigger time	S-minus trigger (s)	Direction (az)	Maximum amplitude (g)	Duration (s)
28 June 1992 (Big Bear earthquake, continued)	San Bernardino Array	34.235	05:40.8	7.3	360	.06	---
	Devore Water Department	117.407			Up	.11	0.1
	(USGS)				270	.06	---
Note: One additional record <sup>1</sup> recovered at Devore water department.							
	Thousand Palms	33.82	(3)	8.2	135	.07	---
	Post Office	116.40			Up	.09	---
	(USGS)				045	.08	---
Note: Three additional records <sup>1</sup> recovered at Thousand Palms post office.							
	Anza Array	33.676	05:41.9	7.7	135	.11	1 peak
	Herkey Creek Park	116.680			Up	.06	---
	(USGS)				045	.08	---
Note: One additional record <sup>1</sup> recovered at Herkey Creek Park.							
	Anza Array	33.630	(3)	3.4	360	.06	---
	Red Mountain	116.847			Up	.03	---
	(USGS)				270	.11	1 peak
	Lytle Creek	34.251	(3)	7.6	360	.08	---
	Mt. Lakes Resort	117.490			Up	.03	---
	(USGS)				270	.08	---
	Riverside	33.968	(3)	5.7			
	Santa Ana River Bridge	117.447					
	(USGS/MWD)						
	Structure Array						
	Ch. 1 - North abutment				346	.02	---
	Ch. 2 - North abutment				Down	.02	---
	Ch. 3 - North abutment				076	.05	---
	Ch. 4 - Pier 7-8, mid-span				346	.16	10.8
	Ch. 5 - Pier 7-8, mid-span				Down	.11	4.7
	Ch. 6 - Pier 7-8, mid-span				076	.11	6.7
	Ch. 7 - Pier 8, below bearing				346	.12	4.6
	Ch. 8 - Pier 8, below bearing				Down	.02	---
	Ch. 9 - Pier 8, below bearing				076	.01	---
	Ch. 10 - Pier 8 above bearing				346	.17	7.0
	Ch. 11 - Pier 8 above bearing				Down	.02	---
	Ch. 12 - Pier 8 above bearing				076	.09	---
	Santa Ana River Bridge						
	North Abutment				166	.06	---
					Up	.05	---
					076	.04	---

Table 1. U.S. Geological Survey Accelerograph Records Recovered During 1992—*Continued*

Earthquake	Station Name (Owner)	Coordinates (Lat. ° N Long. ° W)	Trigger time	S-minus trigger (s)	Direction (az)	Maximum amplitude (g)	Duration (s)	
28 June 1992 (Big Bear earthquake, continued)	Anza Array	33.616	05:42.7	8.6	360	.07	---	
	Garner Valley Fire Station	116.627			Up	.11	1 peak	
	(USGS)				270	.07	---	
	Note: Two additional records <sup>1</sup> recovered at Garner Valley fire station.							
	Anza Array	33.60	05:43.4	7.4	360	.06	---	
	Tripp Flats	116.74			Up	.07	---	
	(USGS)				270	.07	---	
	Lake Mathews Dam	33.852	(3)	7.0	252	.07	---	
	Dike Toe	117.451			Up	.06	---	
	(MWD)				162	.07	---	
Note: One additional record <sup>1</sup> recovered at Lake Mathews dam, dike toe.								
Anza Array	33.578	05:44.1	7.9	360	.06	---		
Pine Meadow Ranch	116.589			Up	.06	---		
(USGS)				270	.06	---		
Skinner Dam	33.58	(3)	5.3					
(MWD)	117.07							
Left Abutment				178	.05	---		
				Up	.03	---		
				088	.06	---		
	Structure Array							
	Ch. 1 - Center crest				180	.08	---	
	Ch. 2 - Center crest				Up	.04	---	
	Ch. 3 - Center crest				270	.09	---	
	Ch. 4 - Left crest				180	.08	---	
	Ch. 5 - Left crest				270	.06	---	
	Ch. 6 - Left slope				270	.04	---	
	Ch. 7 - Center slope				180	.04	---	
	Ch. 8 - Center slope				Up	.03	---	
	Ch. 9 - Center slope				270	.01	---	
	Ch. 10 - Center toe				180	.06	---	
	Ch. 11 - Center toe				Up	.05	---	
	Ch. 12 - Center toe				270	.05	---	
	Anza Array	33.607	(3)	8.1	360	.05	---	
	Pinyon Flat Observatory	116.453			Up	.04	---	
	(USGS)				270	.04	---	
Note: One additional record <sup>1</sup> recovered at Pinyon Flat Observatory.								
	Anza Array	33.512	05:44.9	8.9	360	.06	---	
	Cahuilla Valley	116.798			Up	.02	---	
	(USGS)				270	.05	---	

Table 1. U.S. Geological Survey Accelerograph Records Recovered During 1992—*Continued*

Earthquake	Station Name (Owner)	Coordinates (Lat. ° N Long. ° W)	Trigger time	S-minus trigger (s)	Direction (az)	Maximum amplitude (g)	Duration (s)
28 June 1992 (Big Bear earthquake, continued)	Anza Array	33.568	05:51.5	(2)	360	.05	---
	Rarick Springs	116.510			Up	.04	---
	(USGS)				270	.05	---
	San Antonio Dam	34.157	(3)	9.6			
	Upland	117.676					
	(ACOE)						
	Crest				090	.04	---
					Up	.02	---
					360	.07	---
	Downstream					(1)	
	Anza Array	33.47	05:47.4	8.1		(1)	
	Tule Canyon	116.64					
	(USGS)						
	Prado Dam	33.890	(3)	8.5			
	Corona	117.641					
	(ACOE)						
	Crest				090	.05	---
					Up	.03	---
					360	.04	---
	Left Abutment					(1)	
	Downstream				090	.09	---
					Up	.04	---
					360	.07	---
	Weymouth Filter Plant	34.114	(3)	11.5			
	LaVerne	117.778					
	(MWD)						
	Ground Site					(1)	
	Tank Top				017	.11	8.7
					Up	.14	16.1
					287	.10	4.2
	Anza Array	33.38	05:47.5	11.0		(1)	
	Chihuahua Valley	116.68					
	(USGS)						

Table 1. U.S. Geological Survey Accelerograph Records Recovered During 1992—*Continued*

Earthquake	Station Name (Owner)	Coordinates (Lat. ° N Long. ° W)	Trigger time	S-minus trigger (s)	Direction (az)	Maximum amplitude (g)	Duration (s)
28 June 1992 (Big Bear earthquake, continued)	Diemer Filter Plant Yorba Linda (MWD)	33.913 117.819	(3)	(2)			
	Administration Building				281 Up 191	.04 .02 .05	--- --- ---
	Reservoir Roof				281 Up 191	.05 .06 .06	--- --- ---
	Mecca Fire Station (USGS)	33.572 116.076	05:53.8	9.1	270 Up 180	.04 .02 .06	--- --- ---
	Carbon Canyon Dam Brea (ACOE)	33.914 117.389	(3)	8.2			
	Crest				131 Up 041	.05 .03 .07	--- --- ---
	Left Abutment					(1)	
	Right Abutment				131 Up 041	.04 .02 .05	--- --- ---
	Anza Array Rancho de Anza (USGS)	33.348 116.400	(3)	11.2	360 Up 270	.06 .04 .05	--- --- ---
	Valyermo Forest Station (USGS)	34.44 117.85	(3)	11.7	300 Up 210	.07 .04 .04	--- --- ---
	Orange County Reservoir Ground Level (MWD)	33.935 117.883	(3)	(2)	090 Up 360	.05 .02 .04	--- --- ---
	Brea Dam Fullerton (ACOE)	33.890 117.924	(3)	12.1			
	Crest				132 Up 042	.06 .04 .09	--- --- ---

Table 1. U.S. Geological Survey Accelerograph Records Recovered During 1992—Continued

Earthquake	Station Name (Owner)	Coordinates (Lat. ° N Long. ° W)	Trigger time	S-minus trigger (s)	Direction (az)	Maximum amplitude (g)	Duration (s)
28 June 1992 (Big Bear earthquake, continued)	Left Abutment				132 Up 042	.04 .03 .05	--- --- ---
	Downstream				132 Up 042	.05 .04 .03	--- --- ---
	Santa Ana 400 Civic Center Dr. (USGS)	33.751 117.870	(3)	(2)		(1)	
	Costa Mesa John Wayne Airport (USGS)	33.677 117.869	(3)	9.1	360 Up 270	.05 .02 .05	--- --- ---
	Irvine 19900 MacArthur Blvd. (USGS)	33.656 117.859	(3)	(2)			
	Basement					(1)	
	Structure Array						
	Ch. 1 - Roof NE corner				060	.12	2.3
	Ch. 2 - Roof SW corner				060	.12	1 peak
	Ch. 3 - 7th Floor NE				060	.07	---
	Ch. 4 - 7th Floor SW				060	.08	---
	Ch. 5 - 1st Floor South side				060	.03	---
	Ch. 6 - Roof, SW corner				330	.08	---
	Ch. 7 - 7th Floor, SW				330	.08	---
	Ch. 8 - 1st Floor West side				330	.03	---
	Ch. 9 - 1st Floor South side				330	.05	---
	Ch. 10 - 7th Floor SW corner				Down	.06	---
	Ch. 11 - 1st Floor West side				Down	.02	---
	Ch. 12 - 1st Floor South side				Down	.03	---
	San Joaquin Reservoir (MWD)	33.620 117.842	(3)	(2)			
	Crest				087 Up 357	.04 .02 .08	--- --- ---
	Left Abutment					(1)	
	Littlerock Post Office (USGS)	34.521 117.991	(3)	13.2	300 Up 210	.03 .02 .05	--- --- ---

Table 1. U.S. Geological Survey Accelerograph Records Recovered During 1992—*Continued*

Earthquake	Station Name (Owner)	Coordinates (Lat. ° N Long. ° W)	Trigger time	S-minus trigger (s)	Direction (az)	Maximum amplitude (g)	Duration (s)
28 June 1992 (Big Bear earthquake, continued)	Whittier	33.977	(3)	16.2			
	7215 Bright Ave. (OWNR/USGS)	118.036					
	Basement					(1)	
	5th Floor				180	.04	---
					Up	.03	---
					090	.06	---
	10th Floor				180	.05	---
					Up	.03	---
					090	.06	---
	Newport Beach	33.600	(3)	13.0	360	.06	---
	800 Marguerite (USGS)	117.866			Up	.02	---
					270	.05	---
	Newport Beach	33.618	(3)	13.1			
	800-840 Newport Center Dr. (USGS)	117.878					
	Structure Array						
	Ch. 1 - Tower 2 Level 1 Center				360	.04	---
	Ch. 2 - Tower 2 Level 1 Center				Up	.02	---
	Ch. 3 - Tower 2 Level 1 Center				090	.03	---
	Ch. 4 - Tower 2 Level 2 West				360	Inoperative	
	Ch. 5 - Middle Building Level				360	.04	---
	Ch. 6 - Middle Building Level 2				090	.05	---
	Ch. 7 - Tower 2 Level 9 South				090	.08	---
	Ch. 8-12					Inoperative	
	Whittier Narrows Dam	34.020	(3)	14.8			
	Pico Rivera (ACOE)	118.053					
	Crest					(1)	
	Upstream (Baseyard)				118	.03	---
					Up	.03	---
					028	.06	---
	Borrego Springs	33.21	05:54.1	12.6		(1)	
	Scripps Clinic (USGS)	116.33					
	Costa Mesa Fire Station #4	33.658	(3)	12.1	360	.07	---
	2300 Placentia Ave. (USGS)	117.931			Up	.03	---
					270	.04	---

Table 1. U.S. Geological Survey Accelerograph Records Recovered During 1992—Continued

Earthquake	Station Name (Owner)	Coordinates (Lat. ° N Long. ° W)	Trigger time	S-minus trigger (s)	Direction (az)	Maximum amplitude (g)	Duration (s)
28 June 1992 (Big Bear earthquake, continued)	Norwalk	33.915	(3)	14.8			
	12400 Imperial Highway (USGS)	118.067					
	South Ground Site				090	.06	---
					Up	.04	---
					360	.04	---
	Norwalk	33.917	05:52.6	10.3			
	12440 Imperial Highway (USGS)	118.066					
	Basement					(1)	
	Structure Array 1						
	Ch. 1 - 9th Level(Roof) Center				090	.07	---
	Ch. 2 - 6th Level Center				090	.07	---
	Ch. 3 - 3rd Level Center				090	.03	---
	Ch. 4 - 2nd Level Center				090	.03	---
	Ch. 5 - 1st Level(Bsmt) East end				180	.03	---
	Ch. 6 - 6th Level West-center				180	.12	1 peak
	Ch. 7 - 1st Level(Bsmt) Center				Up	.03	---
	Ch. 8 - 1st Level(Bsmt) Center				090	Inoperative	
	Ch. 9 - 1st Level(Bsmt) Center				180	.04	---
	Ch. 10 - Downhole (30') Center				Up	.03	---
	Ch. 11 - Downhole (30') Center				090	.01	---
	Ch. 12 - Downhole (30') Center				180	.01	---
	Structure Array 2						
	Ch. 13 - 9th Level Roof East end				180	.09	---
	Ch. 14 - 6th Level East end				180	.05	---
	Ch. 15 - 3rd Level East end				180	.03	---
	Ch. 16 - 2nd Level East end				180	.03	---
	Ch. 17 - 9th Level Roof Bldg ctr				180	.09	---
	Ch. 18 - 6th Level Bldg Ctr				180	.07	---
	Ch. 19 - 3rd Level Bldg Ctr				180	.06	---
	Ch. 20 - 2nd Level Bldg Ctr				180	.06	---
	Ch. 21 - 9th Level Roof West end				180	.08	---
	Ch. 22 - 6th Level West end				180	.05	---
	Ch. 23 - 3rd Level West end				180	.03	---
	Ch. 24 - 2nd Level West end				180	.03	---
	North Ground Site	33.917	05:53.7	14.9	090	.05	---
		118.065			Up	.03	---
					360	.06	---
	Garvey Reservoir	34.048	(3)	15.1			
	Monterey Park (MWD)	118.111					
	Crest					(1)	



Table 1. U.S. Geological Survey Accelerograph Records Recovered During 1992—*Continued*

Earthquake	Station Name (Owner)	Coordinates (Lat. ° N Long. ° W)	Trigger time	S-minus trigger (s)	Direction (az)	Maximum amplitude (g)	Duration (s)
28 June 1992 (Big Bear earthquake, continued)	Abutment Building						(1)
	Alhambra	34.085	05:53.6	18.5			
	900 South Fremont Ave.	118.149					
	(USGS)						
	Structure Array						
	Ch. 1 - 12th Floor Center				360	.06	---
	Ch. 2 - 12th Floor Center				090	.05	---
	Ch. 3 - 12th Floor North end				090	.04	---
	Ch. 4 - 6th Floor center				090	.04	---
	Ch. 5 - 6th Floor center				360	.05	---
	Ch. 6 - 6th Floor North end				090	.04	---
	Ch. 7 - 2nd Floor Center				090	.04	---
	Ch. 8 - 2nd Floor Center				360	.03	---
	Ch. 9 - 2nd Floor North end				090	.03	---
	Ch. 10 - Basement Center				360	.04	---
	Ch. 11 - Basement Center				Up	.02	---
	Ch. 12 - Basement Center				090	.03	---
	Pasadena	34.149	(3)	13.7	360	.04	---
	535 S. Wilson Ave.	118.172			Up	.05	---
	(USGS)				270	.03	---
	Los Angeles	33.996	(3)	14.9	360	.05	---
	Bulk Mail Facility (Bell)	118.162			Up	.02	---
	(USGS)				270	.04	---
	Long Beach VA Hospital	33.778	(3)	12.8			
	(VA)	118.118					
	Basement						(1)
	6th Floor						
					360	.04	---
					Up	.03	---
					270	.07	---
	11th Floor						
					360	.08	---
					Up	.03	---
					270	.10	0.4
	Ground Site						
		33.777	(3)	8.0	360	.03	---
		118.115			Up	.02	---
					270	.05	---
	Los Angeles	34.084	(4)	16.0	360	.05	---
	981 Montecito Dr.	118.201			Up	.03	---
	(USGS)				270	.04	---

Table 1. U.S. Geological Survey Accelerograph Records Recovered During 1992—*Continued*

Earthquake	Station Name (Owner)	Coordinates (Lat. ° N Long. ° W)	Trigger time	S-minus trigger (s)	Direction (az)	Maximum amplitude (g)	Duration (s)
28 June 1992 (Big Bear earthquake, continued)	Palmdale Fire Station (USGS)	34.58 118.10	(3)	13.0			(1)
	Los Angeles 255 E. Temple St. (OWNR) 21st level	34.052 118.237	(3)	16.5	120 Up 030	.06 .05 .06	--- --- ---
	Los Angeles 333 S. Hope St. (OWNR) 55th floor	34.053 118.252	(3)	18.5	083 Up 353	.03 .11 .08	--- 0.6 ---
	Los Angeles 1111 Sunset Boulevard (MWD)	34.067 118.248	(3)	(2)			
	Basement						(1)
	4th floor						(1)
	Roof (8)						(1)
	Los Angeles 600 S. Commonwealth Ave. (OWNR) 19th floor	34.063 118.284	(3)	17.0			(1)
	Los Angeles 1526 N. Edgemont St. (OWNR) Roof (8)	34.098 118.294	(3)	16.5	090 Up 360	.08 .03 .09	--- --- ---
	Los Angeles 3000 Leeward Ave. (OWNR) Roof (13)	34.058 118.288	(3)	15.8	090 Up 360	.06 .03 .07	--- --- ---
	Los Angeles 695 S. Vermont Ave. (OWNR) 18th floor	34.060 118.290	(3)	18.6			(1)
	Los Angeles 2005 N. Highland Ave. (OWNR) Roof (8)	34.106 118.336	(3)	(2)			(1)
	Los Angeles 19191 S. Vermont Ave. (OWNR) Roof (11)	33.855 118.291	(3)	13.9	360 Up 270	.05 .02 .03	--- --- ---
	Los Angeles 4929 Wilshire Blvd. (OWNR) Roof (11)	34.063 118.337	(3)	8.3	180 Up 090	.10 .04 .17	1 peak --- 12.0

Table 1. U.S. Geological Survey Accelerograph Records Recovered During 1992—*Continued*

Earthquake	Station Name (Owner)	Coordinates (Lat. ° N Long. ° W)	Trigger time	S-minus trigger (s)	Direction (az)	Maximum amplitude (g)	Duration (s)
28 June 1992 (Big Bear earthquake, continued)	Los Angeles	34.071	(3)	16.6	335	.09	---
	444 S. San Vicente	118.374			Up	.03	---
	(OWNR) Roof (12)				245	.08	---
	Leona Valley	34.62	06:20.2	(2)		(1)	
	Fire Station	118.29					
	(USGS)						
	Los Angeles	33.945	(3)	16.8	090	.05	---
	5250 Century Blvd.	118.372			Up	.03	---
	(OWNR) Roof (8)				360	.04	---
	Palos Verdes Reservoir	34.777	(3)	(2)			
	(MWD)	118.321					
	Crest					(1)	
	Abutment Bldg.					(1)	
	Los Angeles	34.057	(3)	30.6	300	.03	---
	2121 Ave. of the Stars	118.414			Up	.11	1.6
	(OWNR) 36th level				210	.07	---
Note: Two additional records <sup>1</sup> recovered at 2121 Avenue of the Stars, 36th level.							
	Los Angeles	33.946	(3)	14.4	270	.05	---
	6101 Century Blvd.	118.391			Up	.02	---
	(OWNR) 15th level				180	.04	---
	Los Angeles	34.059	(3)	18.9		(1)	
	2029 Century Park East	118.413					
	(OWNR) 43rd Floor						
	Los Angeles	34.058	(3)	19.5	320	.03	---
	2049 Century Park East	118.412			Up	.06	---
	(OWNR) 43rd Floor				230	.05	---
	Los Angeles	34.062	(3)	19.5		(1)	
	10601 Wilshire Blvd.	118.433					
	(OWNR) Roof (21)						
	Los Angeles	34.061	(3)	18.0	160	.08	---
	10660 Wilshire Blvd	118.434			Up	.02	---
	(OWNR) Roof (19)				070	.07	---
	Los Angeles	34.070	(3)	17.9	252	.05	---
	10751 Wilshire Blvd.	118.438			Up	.03	---
	(OWNR) Roof (12)				162	.05	---

Table 1. U.S. Geological Survey Accelerograph Records Recovered During 1992—*Continued*

Earthquake	Station Name (Owner)	Coordinates (Lat. ° N Long. ° W)	Trigger time	S-minus trigger (s)	Direction (az)	Maximum amplitude (g)	Duration (s)
28 June 1992 ( <i>Big Bear earthquake, continued</i> )	San Diego VA Hospital (VA) Basement	32.87 117.23	(3)	(2)		(1)	
	Los Angeles 1955 1/2 Purdue Ave. (USGS)	34.040 118.445	(3)	18.7			
	Basement					(1)	
	1st level					(1)	
	3rd level					(1)	
	Los Angeles Wadsworth VA Hospital (USGS)	34.053 118.452					
	North Ground Site		06:01.3	15.7		(1)	
	South Ground Site		05:58.3	18.8		(1)	
	Los Angeles 12121 Wilshire Blvd. (OWNR) Roof (15)	34.044 118.467	(3)	(2)		(1)	
	Jensen Filter Plant Balboa Park (MWD)	34.312 118.496	(3)	20.3			
	Administration Building Basement					(1)	
	Generator Building					(1)	
	Reservoir Roof					(1)	
28 June 1992 1506 G.m.t. Southern Calif. Epicenters and magnitudes unknown	Forest Falls Post Office (USGS)	34.088 116.919	[06:15.6]	[2.3]	300	.03	---
					Up	.02	---
			[06:59.1]	[2.8]	210	.08	---
					Up	.12	0.1
28 June 1992 1508 G.m.t. Southern Calif. Epicenter and magnitude unknown	Forest Falls Post Office (USGS)	34.088 116.919	08:10.9	(2)			

Table 1. U.S. Geological Survey Accelerograph Records Recovered During 1992—*Continued*<sup>1</sup>

Earthquake	Station Name (Owner)	Coordinates (Lat. ° N Long. ° W)	Trigger time	S-minus trigger (s)	Direction (az)	Maximum amplitude (g)	Duration (s)
28 June 1992 1511 G.m.t. Southern Calif. Epicenter and magnitude unknown	Forest Falls Post Office (USGS)	34.088 116.919	11:40.3	1.9		(1)	
28 June 1992 1517 G.m.t. Southern Calif. Epicenter and magnitude unknown	Forest Falls Post Office (USGS)	34.088 116.919	17:13.0	2.0		(1)	
28 June 1992 1518 G.m.t. Southern Calif. Epicenter and magnitude unknown	Forest Falls Post Office (USGS)	34.088 116.919	18:40.6	(2)		(1)	
28 June 1992 1604 G.m.t. Southern Calif. Epicenter and magnitude unknown	Forest Falls Post Office (USGS)	34.088 116.919	04:47.1	1.2		(1)	
28 June 1992 1701:31.9 G.m.t. Southern Calif. 34.178N, 116.922W Magnitude 4.7 ML	Highland Fire Station (USGS)	34.136 117.213	01:37.2	3.4		(1)	
	Mentone Fire Station (USGS)	34.067 117.117	01:36.4			(1)	
	San Bernardino Array North "F" Street (USGS)	34.183 117.295	01:43.0	(2)		(1)	
28 June 1992 1702 G.m.t. Southern Calif. Epicenter and magnitude unknown	Forest Falls Post Office (USGS)	34.088 116.919	02:35.0	2.0	300 Up 210	.13 .14 .13	0.4 0.3 0.3
28 June 1992 1705:57.5 G.m.t. Southern Calif. 34.256N, 116.912W Magnitude 4.6 ML	Forest Falls Post Office (USGS)	34.088 116.919	06:01.7	2.0	300 Up 210	.11 .03 .08	1 peak --- ---
	Mentone Fire Station (USGS)	34.067 117.117	06:03.4	3.5		(1)	

Note: One additional record<sup>1</sup> recovered at Mentone Fire Station.

Table 1. U.S. Geological Survey Accelerograph Records Recovered During 1992—*Continued*

Earthquake	Station Name (Owner)	Coordinates (Lat. ° N Long. ° W)	Trigger time	S-minus trigger (s)	Direction (az)	Maximum amplitude (g)	Duration (s)
28 June 1992 1746 G.m.t. Southern Calif. Epicenter and magnitude unknown	Highland Fire Station (USGS)	34.136 117.213	46:03.4	4.5		(1)	
28 June 1992 - 29 June 1992 Southern Calif. Epicenters and magnitudes unknown	Fun Valley Reservoir 361 (USGS)	33.925 116.389	(3)	3.0	135 Up 045	.10 .05 05	1 peak --- ---
			(3)	2.8	135 Up 045	.08 .05 .05	--- --- ---
29 June 1992 1441:26.0 G.m.t. Southern Calif. 34.120N, 116.998W Magnitude 4.4 ML	San Bernardino County Government Center (USGS)	34.106 117.287	41:31.6	3.6		(1)	
	San Bernardino Array North "F" Street (USGS)	34.183 117.295	41:35.8	(2)		(1)	
29 June 1992 1601:42.7 G.m.t. Southern Calif. 33.876N, 116.267W Magnitude 5.2 ML	Indio Jackson Road (USGS)	33.747 116.214	01:46.7	2.8	180 Up 090	.20 .08 .19	1.6 --- 1.2
29 June 1992 2252:16.0 G.m.t. Southern Calif. 34.161N, 118.168W Magnitude 3.9 ML	Los Angeles Montecito Drive (USGS)	34.088 118.201	(4)	(2)		(1)	
30 June 1992 2122:54.4 G.m.t. Southern Calif. 34.130N, 116.734W Magnitude 4.8 ML	Forest Falls Post Office (USGS)	34.088 116.919	22:58.2	2.7		(1)	
	Cabazon Post Office (USGS)	33.918 116.782	22:59.4	5.3		(1)	
30 June 1992 2149:00.2 G.m.t. Southern Calif. 34.085N, 116.989W Magnitude 4.4ML	Forest Falls Post Office (USGS)	34.088 116.919	49:01.9	1.2	300 Up 210	.09 .07 .09	--- --- ---

Table 1. U.S. Geological Survey Accelerograph Records Recovered During 1992—Continued

Earthquake	Station Name (Owner)	Coordinates (Lat. ° N Long. ° W)	Trigger time	S-minus trigger (s)	Direction (az)	Maximum amplitude (g)	Duration (s)
29 June 1992- 1 July 1992 Southern Calif. Epicenters and magnitudes unknown	Fun Valley Reservoir 361 (USGS)	33.925 116.389	(3)	(2)	135 Up 045	.08 .05 .09	--- --- ---
			(3)	1.2	135 Up 045	.07 .06 .08	--- --- ---
Note: Three additional records <sup>1</sup> recovered at Fun Valley Reservoir 361.							
	Morongo Valley Fire Station	34.048	(3)	2.6	135 Up 045	.15 .09 .12	1 peak --- 0.3
Note: Five additional records <sup>1</sup> recovered at Morongo Valley Fire Station.							
	North Palm Springs Fire Station (USGS)	33.924 116.543	(3)	3.6	180 Up 090	.05 .03 .03	--- --- ---
			(3)	3.5	180 Up 090	.11 .04 .06	1 peak --- ---
Note: Three additional records <sup>1</sup> recovered at North Palm Springs Fire Station.							
1 July 1992 0014:26.8 G.m.t. Southern Calif. 34.081N, 116.989W Magnitude 3.6 ML	Forest Falls Post Office (USGS)	34.088 116.919	14:28.4	1.1		(1)	
1 July 1992 0443:53.0 G.m.t. Southern Calif. 34.115N, 116.742W Magnitude 3.2 ML	Forest Falls Post Office (USGS)	34.088 116.919	43:57.0	2.2		(1)	
1 July 1992 0740:29.8 G.m.t. Southern Calif. 34.332N, 116.462W Magnitude 5.4 ML	Morongo Valley Fire Station (USGS)	34.048 116.577	40:43.3	(2)		(1)	
1 July 1992 1745:45.5 G.m.t. Southern Calif. 34.284N, 116.728W Magnitude 4.1 ML	Forest Falls Post Office (USGS)	34.088 116.919	45:56.3	(2)		(1)	

Table 1. U.S. Geological Survey Accelerograph Records Recovered During 1992—*Continued*

Earthquake	Station Name (Owner)	Coordinates (Lat. ° N Long. ° W)	Trigger time	S-minus trigger (s)	Direction (az)	Maximum amplitude (g)	Duration (s)
7 January 1992- 2 July 1992 Southern Calif. Epicenters and magnitudes unknown	Salton Sea Wildlife Refuge (USGS)	33.18 115.62	(3)	0.8	315 Up 225	.04 .02 .09	--- --- ---
Note: Two additional records <sup>1</sup> recovered at Salton Sea Wildlife Refuge.							
29 June 1992- 2 July 1992 Southern Calif. Epicenters and magnitudes unknown	Whitewater Canyon Trout Farm (USGS)	33.989 116.655	(3)	2.6	270 Up 180	.12 .08 .08	0.2 --- ---
Note: Three additional records <sup>1</sup> recovered at Whitewater Canyon Trout Farm.							
2 July 1992 0331:18.1 G.m.t. Southern Calif. 34.032N, 117.120W Magnitude 3.1 ML	Mentone Fire Station (USGS)	34.067 117.117	(3)	(2)		(1)	
Note: Two additional records <sup>1</sup> recovered at Mentone fire station.							
2 July 1992 0756:26.3 G.m.t. Southern Calif. 34.138N, 116.856W Magnitude 3.6 ML	Forest Falls Post Office (USGS)	34.088 116.919	56:28.2	0.8		(1)	
3 July 1992 0415:50.3 G.m.t. Southern Calif. 34.210N, 116.771W Magnitude 3.6 ML	Forest Falls Post Office (USGS)	34.088 116.919	15:54.2	2.8		(1)	
6 July 1992 1135:33.3 G.m.t. Southern Calif. 34.093N, 116.446W Magnitude 3.9 ML	Morongo Valley Fire Station (USGS)	34.048 116.577	35:36.4	2.5		(1)	
Note: Two additional records <sup>1</sup> recovered at Morongo Valley Fire Station.							
6 July 1992 1941:37.8 G.m.t. Southern Calif. 34.082N, 116.378W Magnitude 4.4 ML	Morongo Valley Fire Station (USGS)	34.048 116.577	41:44.6	(2)		(1)	
Note: Two additional records <sup>1</sup> recovered at Morongo Valley Fire Station.							
30 June 1992- 22 July 1992 Southern Calif. Epicenters and magnitudes unknown	San Bernardino Array Mill Creek Ranger Station (USGS)	34.080 117.114	(3)	1.1	360 Up 270	.12 .09 .16	1 peak --- 0.2
Note: Six additional records <sup>1</sup> recovered at Mill Creek Ranger Station.							



Table 1. U.S. Geological Survey Accelerograph Records Recovered During 1992—Continued

Earthquake	Station Name (Owner)	Coordinates (Lat. ° N Long. ° W)	Trigger time	S-minus trigger (s)	Direction (az)	Maximum amplitude (g)	Duration (s)
1 July 1992- 23 July 1992 Southern Calif. Epicenters and magnitudes unknown	Fun Valley Reservoir 361 (USGS)	33.925 116.389	(3)	(2)	135 Up 045	.12 .07 .09	0.6 --- ---
			(3)	(2)	135 Up 045	.07 .03 .04	--- --- ---
			(3)	0.3	135 Up 045	.08 .04 .06	--- --- ---
Note: Six additional records <sup>1</sup> recovered at Fun Valley Reservoir 361.							
24 July 1992 1814:36.2 G.m.t. Southern Calif. 33.902N, 116.284W Magnitude 5.0 ML	Indio Jackson Road (USGS)	33.737 116.214	14:40.7	3.5	180 Up 090	.08 .06 .09	--- --- ---
24 July 1992 1815 G.m.t. Southern Calif. Epicenter and magnitude unknown	Indio Jackson Road (USGS)	33.737 116.214	[15:30.8]	[4.0]		(1)	
25 July 1992 0821:40.3 G.m.t. Southern Calif. 34.111N, 116.919W Magnitude 3.4 ML	Forest Falls Post Office (USGS)	34.088 116.919	21:42.7	(2)		(1)	
28 June 1992- 30 July 1992 Southern Calif. Epicenter and magnitude unknown	Pasadena 535 South Wilson Ave. (USGS)	34.149 118.172	(3)	0.9		(1)	
15 August 1992 0824:14.6 G.m.t. Southern Calif. 34.088N, 116.402W Magnitude 4.8 ML	Morongo Valley Fire Station (USGS)	34.048 116.577	24:21.6	(2)		(1)	
Note: Two additional records <sup>1</sup> recovered at Morongo Valley fire station.							
16 August 1992 0630:59.5 G.m.t. Southern Calif. 34.030N, 116.677W Magnitude 3.8 ML	Cabazon Post Office (USGS)	33.918 116.782	31:05.3	(2)		(1)	

Table 1. U.S. Geological Survey Accelerograph Records Recovered During 1992—*Continue*<sup>1</sup>

Earthquake	Station Name (Owner)	Coordinates (Lat. ° N Long. ° W)	Trigger time	S-minus trigger (s)	Direction (az)	Maximum amplitude (g)	Duration (s)
17 August 1992 2041:52.1 Southern Calif. 34.195N, 116.862W Magnitude 5.3 ML	Cabazon Post Office (USGS)	33.918 116.782	41:58.1	4.0	270 Up 180	.05 .05 .04	--- --- ---
	San Bernardino Array 5931 North "F" St. (USGS)	34.183 117.295	42:05.3	(2)		(1)	
26 July 1992- 18 August 1992 Southern Calif. Epicenter and magnitude unknown	Forest Falls Post Office (USGS)	34.088 116.919	(3)	2.1	300 Up 210	.24 .08 .17	0.2 --- 0.2
18 August 1992 0946:40.7 G.m.t. Southern Calif. 34.198N, 116.862W Magnitude 4.0 ML	Morongo Valley Fire Station (USGS)	34.048 116.577	46:46.7	4.2		(1)	
	Note: Two additional records <sup>1</sup> recovered at Morongo Valley fire station.						
	Forest Falls Post Office (USGS)	34.088 116.919	46:46.2	(2)		(1)	
	Note: One additional record <sup>1</sup> recovered at Forest Falls post office.						
3 October 1992 0551:41.4 G.m.t. Hawaii 19.328N, 155.072W Magnitude 4.3 MD	Hilo Hospital, Hawaii (USGS)	19.72 155.12	(4)	(2)		(1)	
	Hilo, Hawaii USDA Lab. (USGS)	19.731 155.100	(4)	(2)	360 Up 270	.03 .03 .15	--- --- 0.5
10 October 1992 0725:26.5 G.m.t. Hawaii 19.701N, 154.998W Magnitude 4.5 MD	Laupahoehoe, Hawaii Post Office (USGS)	19.987 155.236	(4)	(2)		(1)	
	Waimea, Hawaii Fire Station (USGS)	20.026 155.664	(4)	(2)	360 Up 270	.03 .07 .02	--- --- ---
18 October 1992 0739 G.m.t. Northern Calif. Epicenter and magnitude unknown	Bear Valley Station 10 Webb Residence (USGS)	36.532 121.143	39:48.7	0.9	310 Up 220	.06 .02 .02	--- --- ---

Table 1. U.S. Geological Survey Accelerograph Records Recovered During 1992—*Continued*

Earthquake	Station Name (Owner)	Coordinates (Lat. ° N Long. ° W)	Trigger time	S-minus trigger (s)	Direction (az)	Maximum amplitude (g)	Duration (s)
28 May 1992- 21 October 1992 Central Calif. Epicenter and magnitude unknown	McGee Creek	37.550	(4)	0.9	180	.10	1 peak
	Mammoth Lakes	118.811			Up	.04	---
	(USGS) (Triaxial)				090	.06	---
			(4)	0.2	180	.07	---
					Up	.05	---
					090	.08	---
			(4)	(2)	180	.06	---
					Up	.08	---
					090	.10	1 peak

Note: Three additional records<sup>1</sup> recovered at McGee Creek triaxial station.

McGee Creek	37.550	(4)					
Mammoth Lakes	118.811						
(USGS) (Multi-channel)							
166 m Downhole				0.9		(1)	
35 m Downhole				0.9		(1)	
1 m Downhole				0.9		(1)	
Surface				0.9	360	.09	---
					Up	.01	---
					270	.06	---
166 m Downhole				(2)		(1)	
35 m Downhole				0.1		(1)	
1 m Downhole				0.2		(1)	
Surface				0.2	360	.08	---
					Up	.05	---
					270	.07	---
166 m Downhole				(2)		(1)	
35 m Downhole				(2)		(1)	
1 m Downhole				(2)	180	.03	---
					Up	.05	---
					270	.04	---
Surface				(2)	360	.06	---
					Up	.08	---
					270	.09	---

Note: Three additional records<sup>1</sup> recovered at McGee Creek multi-channel station.

Table 1. U.S. Geological Survey Accelerograph Records Recovered During 1992—*Continued*

Earthquake	Station Name (Owner)	Coordinates (Lat. ° N Long. ° W)	Trigger time	S-minus trigger (s)	Direction (az)	Maximum amplitude (g)	Duration (s)
27 November 1992 1600:57.4 G.m.t. Southern Calif. 34.340N, 116.900W Magnitude 5.3 ML	San Bernardino Array 5931 North "F" St. (USGS)	34.183 117.295	01:12.0	(2)		(1)	
	Mentone Fire Station (USGS)	34.067 117.117	01:12.8	(2)		(1)	
17 June 1992- 3 December 1992 Northern Calif. Epicenter and magnitude unknown	Bear Valley Station 12 Williams Ranch (USGS)	36.658 121.249	(3)	0.9		(1)	
29 June 1992- 16 December 1992 Southern Calif. Epicenters and magnitudes unknown	Thousand Palms Post Office (USGS)	33.82 116.40	(3)	2.1	135 Up 045	.07 .03 .05	--- --- ---
Note: Four additional records <sup>1</sup> recovered at Thousand Palms post office.							
1 July 1992- 16 December 1992 Southern Calif. Epicenters and magnitudes unknown	North Palm Springs (USGS)	33.924 116.543	(3)	3.0	180 Up 090	.09 .04 .09	--- --- ---
Note: Six additional records <sup>1</sup> recovered at North Palm Springs.							
22 July 1992- 16 December 1992 Southern Calif. Epicenters and magnitudes unknown	Whitewater Canyon Trout Farm (USGS)	33.989 116.655	(3)	2.6	270 Up 180	.05 .03 .04	--- --- ---
			(3)	3.8	270 Up 180	.07 .03 .06	--- --- ---
Note: Ten additional records <sup>1</sup> recovered at Whitewater Canyon Trout Farm.							
23 July 1992- 16 December 1992 Southern Calif. Epicenters and magnitudes unknown	Fun Valley Reservoir 361 (USGS)	33.925 116.389	(3)	1.3	135 Up 045	.11 .07 .11	0.3 --- 1 peak
			(3)	1.3	135 Up 045	.10 .09 .13	0.5 --- 0.5
			(3)	(2)	135 Up 045	.06 .04 .04	--- --- ---

Table 1. U.S. Geological Survey Accelerograph Records Recovered During 1992—*Continued*

Earthquake	Station Name (Owner)	Coordinates (Lat. ° N Long. ° W)	Trigger time	S-minus trigger (s)	Direction (az)	Maximum amplitude (g)	Duration (s)
23 July 1992-			(3)	2.2	135	.13	1 peak
16 December 1992					Up	.06	---
(continued)					045	.10	1 peak
Note: Six additional records <sup>1</sup> recovered at Fun Valley Reservoir 361.							
22 July 1992-	San Bernardino Array	34.080	(3)	2.4	360	.09	---
17 December 1992	Mill Creek Ranger Station	117.114			Up	.05	---
Southern Calif.	(USGS)				270	.08	---
Epicenters and magnitudes unknown	Note: Three additional records <sup>1</sup> recovered at Mill Creek Ranger Station.						

<sup>1</sup> Less than 0.05 g at ground-level or less than 0.10 g at non-ground-level stations.

<sup>2</sup> Questionable or indeterminable.

<sup>3</sup> WWVB time code illegible, or instrument not equipped with a radio receiver; correlation of accelerogram with event may be questionable or identity of event unknown.

<sup>4</sup> Contains internal clock for event correlation only (accuracy is widely variable).



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