



UTAH PETROLEUM COMPANY  
SALT LAKE CITY, UTAH 84110  
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NATURAL RESOURCES GROUP  
Energy Minerals Division  
Geothermal Operations

August 8, 1980

Sky Schaff  
University of Utah Research Institute  
Earth Science Laboratory  
420 Chipeta Way, Suite 120  
Salt Lake City, Utah 84108

Dear Mr. Schaff:

Transmitted herewith is a copy of the Senturian Telmo Survey,  
including tables and maps, which you requested.

Sincerely,

*R.C. Lenzer*

R.C. Lenzer  
Exploration Director

RCL:sdm  
Enclosures

Black Point Anomaly (northeast one-fourth of T. 23 S., R. 8 W.) is a four-station (#27, #28, #66, and #68) anomaly and is probably cut by groundmotion Fault VIII. Stations #27 and #68 were occupied twice and statistically remained stable within twelve percent of each visit. This anomaly agrees with the MT results as being geothermally anomalous.

The faults mapped via the groundmotion survey utilized 14 cross-sections presenting the IP, MF, and Topography, as well as the Vector Gradient of the Rate of Divergence of between the IP and MF. The presence of faults were confirmed on the cross-section profiles and their trends supported by the Vector Gradient of the Rate of Divergence.

The anomalies along the west edge of the Pavant Range were encompassed by ten additional stations which were too tardy to be included in this reporting, but they will bound the Tabernacle and Pine Creek Anomalies and be reported within the month.

### Microearthquake

**CONFIDENTIAL**

Three Cove Creek microearthquake arrays (Figure 14) were deployed in the Cove Creek, Cove Fort, and Roosevelt areas. The respective surveys were 17, 21, and 10 days in duration, and altogether approximately 400 events were detected (approximately eight events per day), with 70 percent being local and having S-P intervals of less than 3 seconds. Four significant microearthquake clusters were detected (Figure 14); the Cove Fort cluster is centered one mile north of Cove Fort; the adjacent Cove Creek anomaly extends two to twelve miles west of Cove Fort; the White Sage Flat cluster is seven miles north of Cove Fort; and the Bailey Springs cluster is 15 miles southwest of Cove Fort. The latter cluster occurs adjacent to the Roosevelt steam field.

The Cove Fort cluster occurs in the vicinity of nearby sulphur deposits; this is at the junction of a suspected transverse fault which intersects north-south regional faulting. Cove Fort events were detected with all three arrays (examples in Figures 15, 16, and 17).

The adjacent, westward Cove Creek cluster (two to twelve miles west of Cove Fort) surrounds the flanks of the magnetic low. The MT survey also mapped a fault along the northern boundary of this anomaly and came upon a shallow (3000 feet) conductivity anomaly on the west end of the Cove Creek anomaly.

The groundmotion survey mapped faulting around this magnetic low; however, the interpretation is northwesterly rather than east-west as is indicated by the seismic and magnetotelluric data. The epicenter distribution and the magnetic low suggest movements of a deep magma body where most stress changes occur at the periphery. Depths to these events were typically 3 to 5 km.

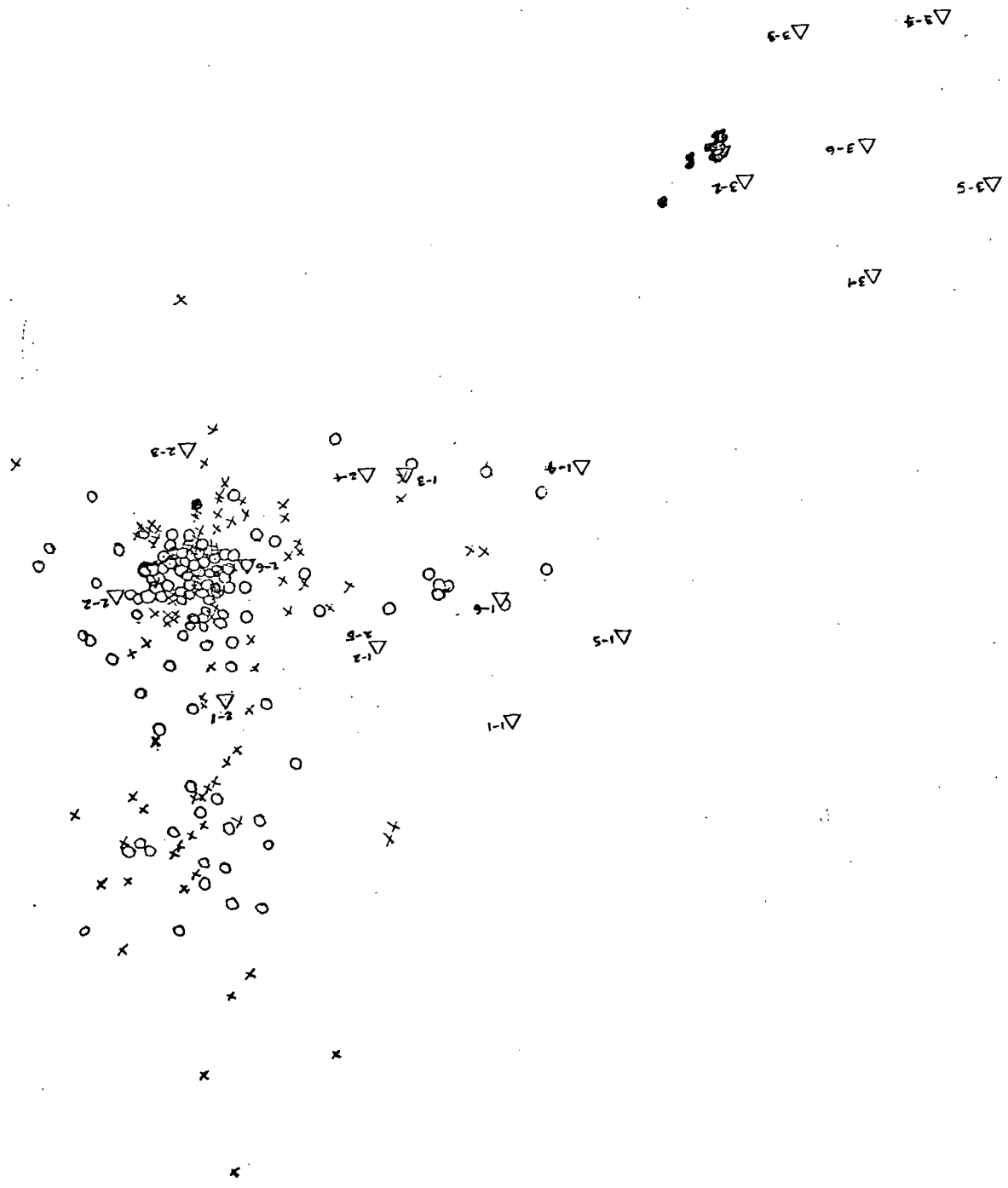
The White Sage microearthquake anomaly, seven miles north of Cove Fort, occurs where a small overthrust transects an apparent, north-south fault zone. This fault zone appears to extend from the Cove Fort cluster northward as sensed by both the MEQ and MT. Because most seismicity was 12 to 15 miles (calculated from signal-to-noise

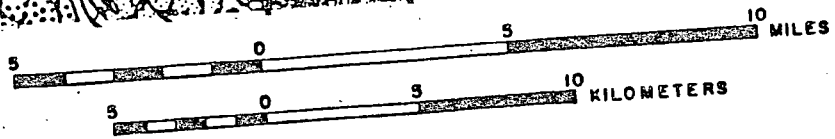
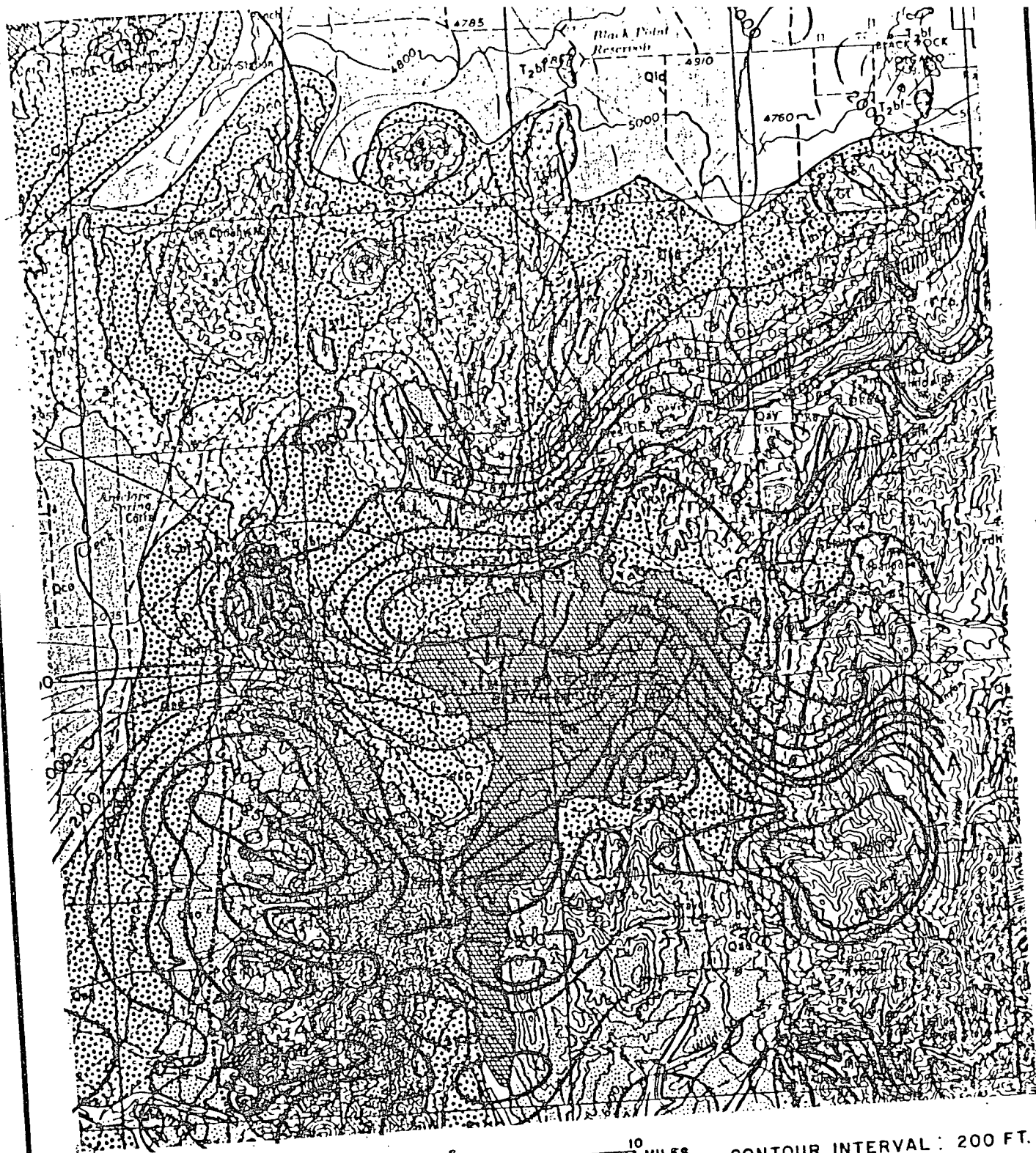
studies as well as empirical locations), it is not known whether events occurred further to the north.

Bailey Springs events are located three miles east of the geothermal wells in the Roosevelt geothermal area. Twenty of the Bailey Springs events (example in Figure 17) had identical character which indicates they originate within a few tens of meters of each other. These point source events occur at 6 km depths which is 2 to 3 km deeper than most of the events near Cove Fort. Another factor which may be of significance to further development in the Roosevelt geothermal area was the observed time correction of 130 ms required at Station #5 (as derived from the apparent velocity vectors). This large time correction at Station #5 reflects excessive delay which could be due to highly porous and/or heated and/or alluvium material nearby. The apparent velocity and MP agree that the impedance change exists at 1500 feet beneath Station #5.

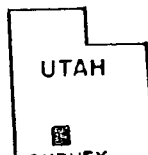
As mentioned, the majority of events in this area are detectable only when they occur within 10 to 15 miles of the array; therefore, long recording periods are necessary to detect a few of the larger magnitude events. For example, during Cove Creek 3 investigations at Roosevelt, only two events were recorded from the active Cove Fort area. On the other hand, during the 38 recording days at Cove Fort, only one Bailey event was detected.

Distant events which should be worthy of additional geothermal investigations include a few events surrounding the northern Black Mountains which are approximately 30 miles toward the south-southwest of Cove Fort. A few other events occurred within the Sevier River Valley approximately 25 miles east-northeast of Cove Fort. Figures 18 through 25 are seismicity distributions versus calendar day, time of day, and azimuth for each of the Cove Creek arrays. When comparing seismicity rate versus time of day, 8.9 and 9.1 events per day were recorded at the Cove Creek 1 and 2 arrays; on the other hand, only 3.8 events per day were detected with the Cove Creek 3 array. Because most seismicity is local to each of the areas, seismicity rates at Cove Fort is approximately 2.4 times greater than that at Roosevelt. Seismicity versus time of day normally decreases during midday because of increases in wind conditions and cultural noise.





CONTOUR INTERVAL : 200 FT.  
SCALE : 1 : 250,000



△ Array - Station No.  
Earthquake Epicenters (Dec., 1975)

SIGNATURE RECORD OF COVE FORT EVENT (COVE CREEK I ARRAY)

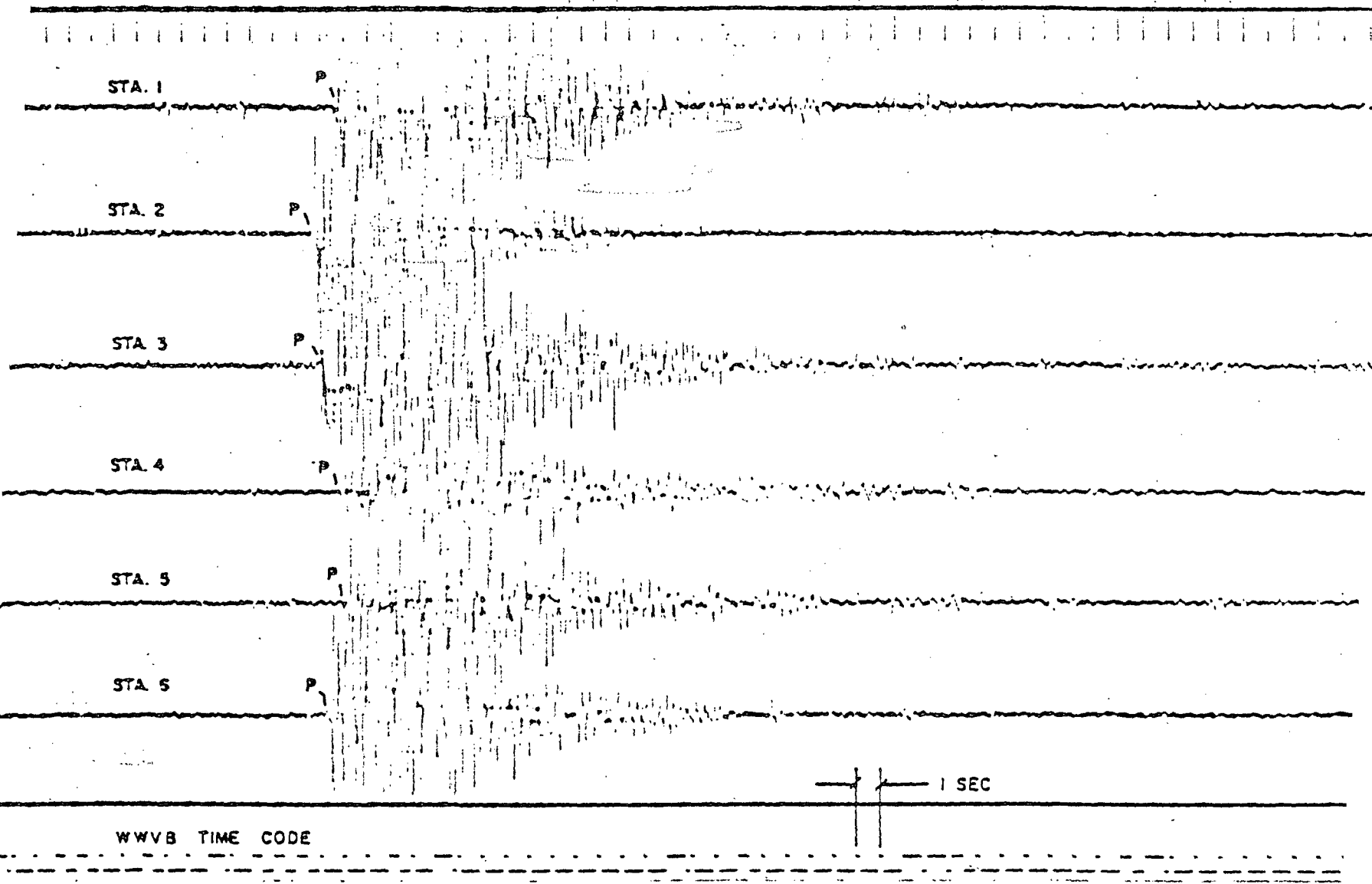


Figure 15

IGNATURE RECORD

EXPANDED RECORD OF COVE FORT EVENT (COVE CREEK 2 ARRAY)

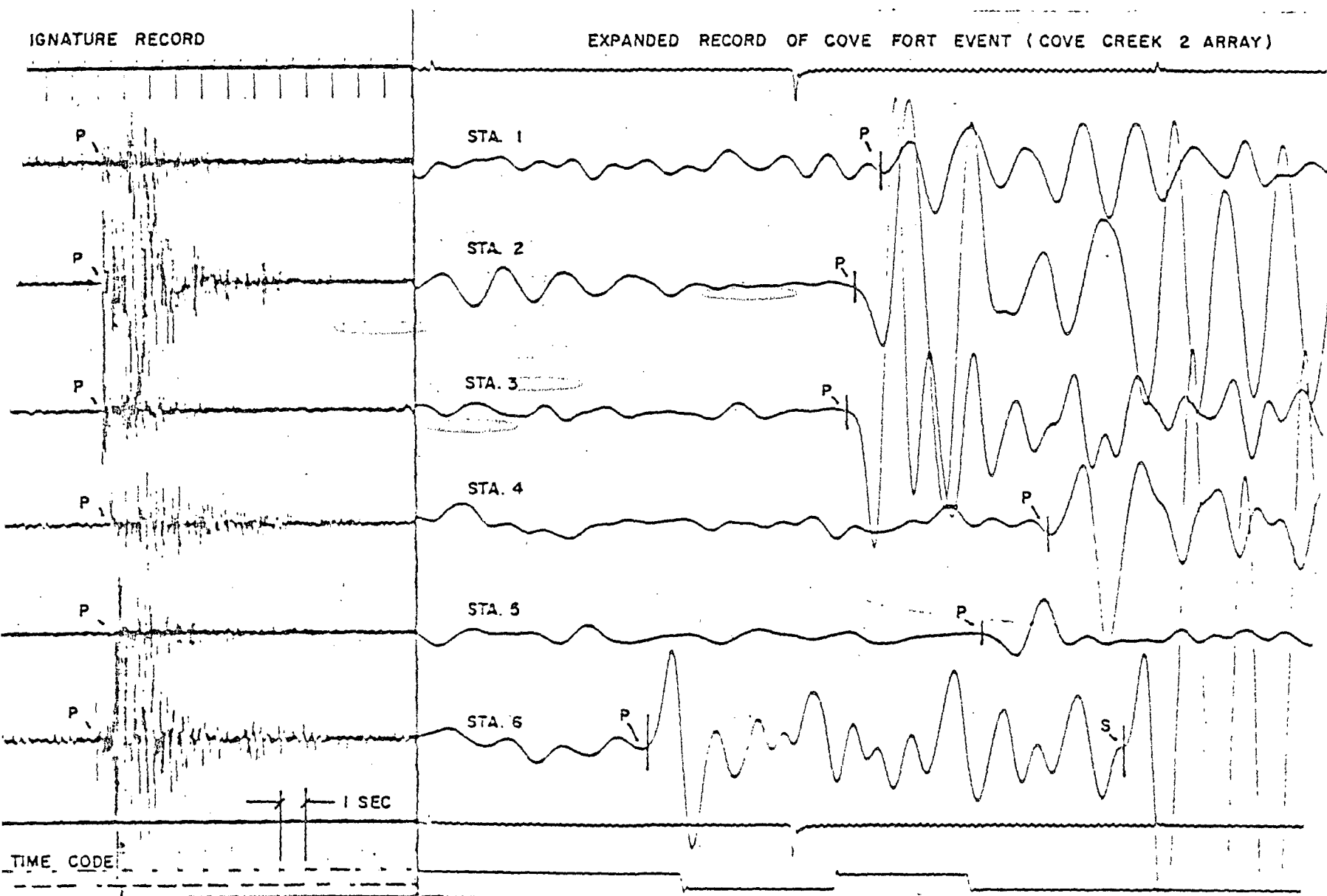


Figure 16

SIGNATURE RECORD OF COVE FORT EVENT (COVE CREEK 3 ARRAY)

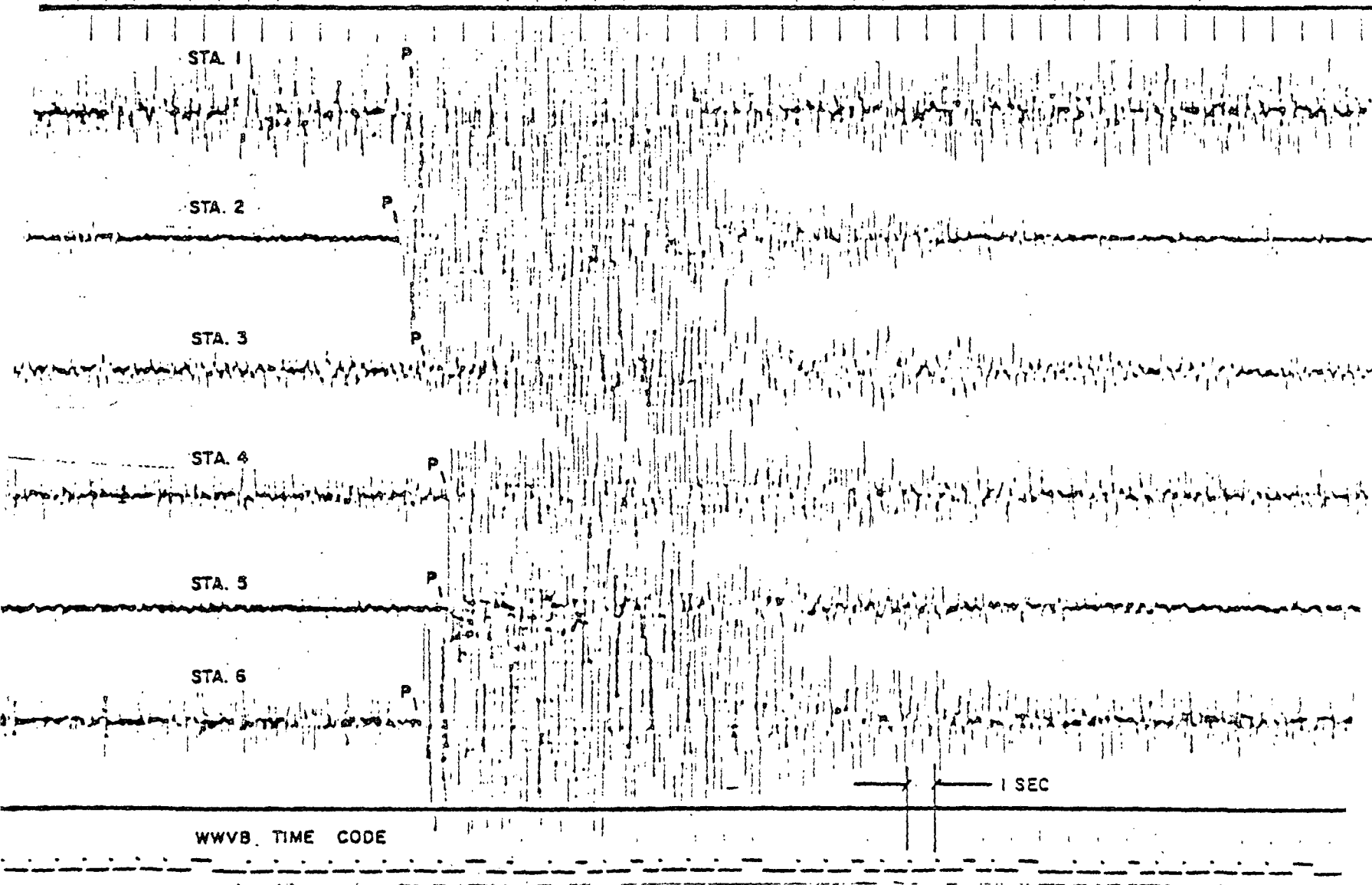
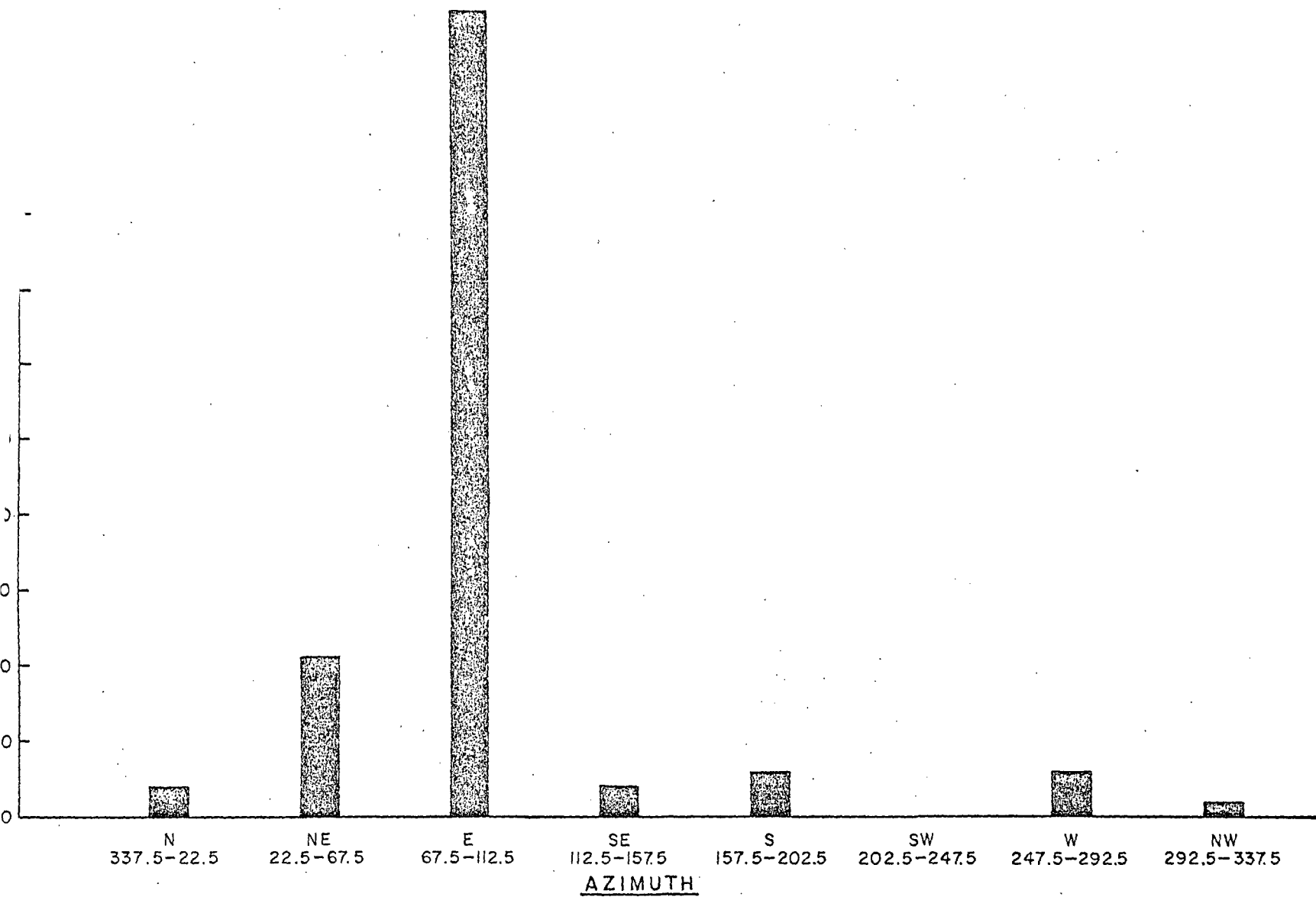


Figure 17









20. Cove Creek I Seismicity Versus Azimuth





			189			
			177			
	188		176			
	175		173			
	164		163			
	159		152			
	156		151			
	150		145			
	148		143			
	147		142			
	144		140			
	141		138			
	139		131			
190	135		124			
172	129		115			
122	126		104			
121	116		103			
118	97		101			
114	94		93	184		
109	92		88	180		
78 *	87		84	162		
75	85		80	155		
71	77		72	146	149	
59	70		58	117	113	
51	65		36	108	112	
44	56		28	107	100	191
43	55		26	95	99	187
41	54		17	76	89	186
40	53		16	73	81	179
37	52		15	19	79	167
34	42		14	12	50	123
29	31		13	11	45	63
22	24		7	5	32	46
20	8		4	2	21	35
10	6		3	1	18	27

NE                      E                      SE                      S                      SW                      W                      NW  
 22.5    22.5-67.5    67.5-112.5    112.5-157.5    157.5-202.5    202.5-247.5    247.5-292.5    292.5-337.5  
 AZIMUTH

Seismicity versus Azimuth from the Cove Creek II Array: March 19 through April 18, 1976. Most events are 100-200 km north and beneath the array. Events denoted with asterisks are probably blasts at distances of 150-250 km north and northeast of the array.



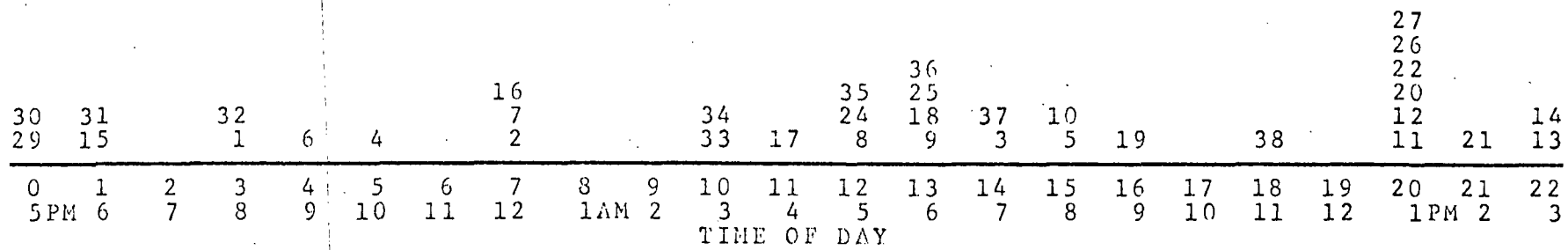


Figure 25. Cove Creek III Seismicity versus Time of Day.



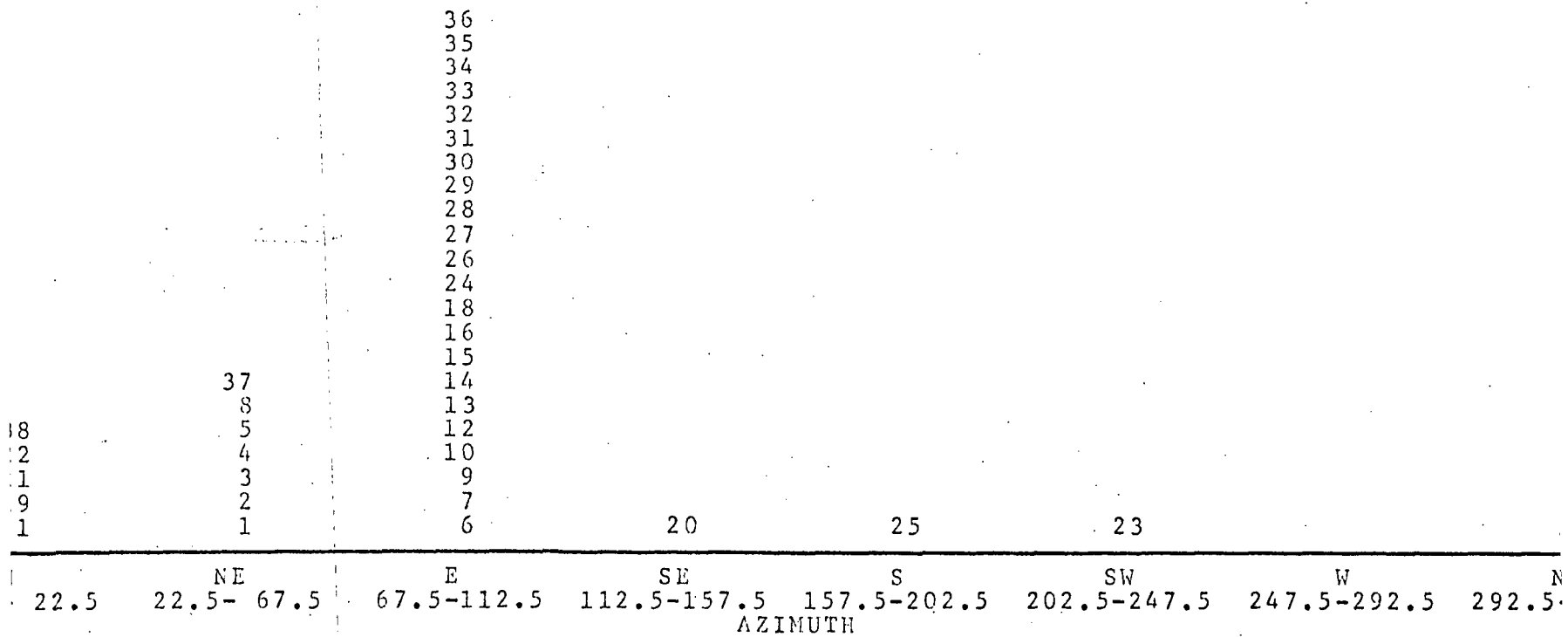


Figure 26. Cove Creek III Seismicity versus Azimuth.

TABLE 1. Cove Creek 1 Epicenter and Hypocenter Summary.

ARRAY CENTER: LATITUDE 38 37.58 LONGITUDE 112 41.46

EVENT	LATITUDE		LONGITUDE		DEPTH KM	DIRECTION DEG	DISTANCE		DEPTH		COMMENTS
	DEG	MIN	DEG	MIN			KM	MILE	KM	KFT	
1	38	37.10	112	34.11	2.1	94.8	10.7	6.7	2.1	6.7	1,7
2	40	30.37	114	5.59	?	330.0	241.0	150.6	?	?	3,8
3	38	38.24	112	31.44	2.7	85.2	14.6	9.1	2.7	8.8	1,6,8
4	38	37.04	112	32.88	4.1	94.6	12.5	7.8	4.1	13.4	1,7
5	38	36.69	112	32.92	4.8	97.6	12.5	7.8	4.8	15.8	1,7
6	38	34.90	112	31.20	5.8	108.4	15.7	9.8	5.8	19.1	1,7
7	38	36.98	112	33.23	2.8	95.3	12.0	7.5	2.8	9.1	1,5
8	38	36.86	112	34.22	2.2	97.2	10.6	6.6	2.2	7.3	1,5,8
9	38	36.53	112	32.40	5.2	98.4	13.3	8.3	5.2	17.1	1,5
10	38	36.33	112	33.14	2.6	100.8	12.3	7.7	2.6	8.5	1,5
11	38	36.68	112	33.62	2.8	98.3	11.5	7.2	2.8	9.1	1,5
12	40	35.81	112	4.76	?	13.5	225.0	140.6	?	?	3,7
13	38	43.87	112	32.44	2.7	48.4	17.5	10.9	2.7	8.9	1,5,8
14	38	35.79	112	32.37	8.5	104.1	13.6	8.5	8.5	27.8	1,8
15	38	37.72	112	36.78	6.6	87.8	6.8	4.3	6.6	21.7	1,5,8
16	38	36.36	112	33.34	6.0	100.8	12.0	7.5	6.0	19.7	1,5,8
17	38	36.64	112	33.63	4.0	98.7	11.5	7.2	4.0	13.2	1,5,8
18	38	36.90	112	34.14	2.6	96.8	10.7	6.7	2.6	8.5	1,5,8
19	38	36.12	112	33.12	2.5	102.6	12.4	7.8	2.5	8.1	1,5,8
20	38	35.67	112	42.75	3.2	207.9	4.0	2.5	3.2	10.5	1,6,8
21	39	13.92	115	21.59	?	286.2	241.0	150.6	?	?	3,6
22	38	38.11	112	31.84	?	86.0	14.0	8.8	?	?	1,7
23	38	5.60	112	54.19	?	197.4	62.0	38.8	?	?	2,6,8
24	38	35.09	112	41.42	3.7	179.3	4.6	2.9	3.7	12.0	1,6
25	38	36.31	112	33.56	6.8	101.6	11.7	7.3	6.8	22.4	1,5

COMMENTS:

- |   |                                  |
|---|----------------------------------|
| 1. LOCAL EVENT, 0-25 KM (0-16 MILES)            | 5. FAIR TO EXCELLENT ONSETS      |
| 2. NEAR REGIONAL EVENT, 25-100 KM (16-65 MILES) | 6. POOR TO FAIR ONSETS           |
| 3. REGIONAL EVENT, 100-1000 KM (65-600 MILES)   | 7. POOR AND EXCELLENT ONSETS     |
| 4. TELESEISM, +1000 KM (+600 MILES)             | 8. EMERGENT AND/OR DEAD TRACE(S) |

Table 1 (Continued). Cove Creek 1 Epicenter and Hypocenter Summary.

EVENT	LATITUDE		LONGITUDE		DEPTH KM	DIRECTION DEG	DISTANCE		DEPTH		COMMENTS
	DEG	MIN	DEG	MIN			KM	MILE	KM	KFT	
26	38	37.68	112	34.98	5.0	88.9	9.4	5.9	5.0	16.4	1,7
27	38	42.94	112	33.24	6.8	50.3	15.5	9.7	6.8	22.3	1,7
28	36	9.26	123	9.00	?	253.5	966.0	603.8	?	?	4,5
29	38	28.88	115	15.93	?	265.9	225.0	140.6	?	?	3,5
30	38	35.28	112	36.00	?	118.2	9.0	5.6	?	?	1,7
31	35	42.39	122	56.20	?	250.4	966.0	603.8	?	?	4,8
32	38	42.28	112	34.98	2.6	47.2	12.8	8.0	2.6	8.7	1,5
33	38	16.68	111	29.21	?	110.2	112.0	70.0	?	?	3,7
34	38	36.89	112	32.96	2.6	95.9	12.4	7.8	2.6	8.6	1,7
35	38	36.26	112	29.66	3.0	98.1	17.3	10.8	3.0	9.8	1,5
36	38	36.41	112	33.82	1.9	101.0	11.3	7.1	1.9	6.1	1,7,8
37	38	36.39	112	34.67	4.6	102.6	10.1	6.3	4.6	15.2	1,5
38	38	36.95	112	36.43	6.7	99.1	7.4	4.6	6.7	22.0	1,7,8
39	38	36.45	112	34.51	3.1	101.7	10.3	6.4	3.1	10.3	1,7
40	38	36.13	112	33.97	5.3	103.8	11.2	7.0	5.3	17.5	1,5
41	38	36.23	112	33.73	5.2	102.6	11.5	7.2	5.2	16.9	1,5
42	38	36.49	112	34.29	5.0	101.0	10.6	6.6	5.0	16.4	1,7,8
43	38	36.12	112	33.97	2.6	104.0	11.2	7.0	2.6	8.4	1,7
44	38	4.65	112	39.41	?	177.2	61.0	38.1	?	?	2,6
45	38	36.35	112	32.99	5.2	100.5	12.5	7.8	5.2	16.9	1,7
46	38	33.42	112	26.68	5.0	109.7	22.8	14.3	5.0	16.4	1,5
47	38	36.41	112	33.75	2.8	101.0	11.4	7.1	2.8	9.3	1,7,8
48	38	37.84	112	30.85	2.5	88.2	15.4	9.6	2.5	8.3	1,7,8
49	38	36.54	112	32.95	2.7	98.9	12.5	7.8	2.7	8.8	1,7
50	38	37.77	112	30.71	2.8	88.7	15.6	9.8	2.8	9.3	1,5

## COMMENTS:

- |   |                                  |
|---|----------------------------------|
| 1. LOCAL EVENT, 0-25 KM (0-16 MILES)            | 5. FAIR TO EXCELLENT ONSETS      |
| 2. NEAR REGIONAL EVENT, 25-100 KM (16-65 MILES) | 6. POOR TO FAIR ONSETS           |
| 3. REGIONAL EVENT, 100-1000 KM (65-600 MILES)   | 7. POOR AND EXCELLENT ONSETS     |
| 4. TELESEISM, +1000 KM (+600 MILES)             | 8. EMERGENT AND/OR DEAD TRACE(S) |

Table 1 (Continued). Cove Creek 1 Epicenter and Hypocenter Summary.

EVENT	LATITUDE		LONGITUDE		DEPTH KM	DIRECTION DEG	DISTANCE		DEPTH		COMMENTS
	DEG	MIN	DEG	MIN			KM	MILE	KM	KFT	
51	38	37.54	112	39.95	3.5	91.9	2.2	1.4	3.5	11.3	1,7
52	38	36.32	112	33.49	4.0	101.4	11.8	7.4	4.0	13.3	1,7
53	38	36.52	112	33.44	3.7	99.6	11.8	7.4	3.7	12.0	1,7,8
54	38	36.35	112	33.63	2.6	101.4	11.6	7.3	2.6	8.6	1,7
55	38	36.61	112	33.50	2.9	98.9	11.7	7.3	2.9	9.3	1,7
56	38	36.81	112	34.43	5.0	97.9	10.3	6.4	5.0	16.4	1,7,8
57	38	36.32	112	33.84	5.1	101.9	11.3	7.1	5.1	16.6	1,7
58	38	36.43	112	34.52	2.5	101.9	10.3	6.4	2.5	8.3	1,7
59	38	36.86	112	33.94	?	97.0	11.0	6.9	?	?	1,7,8
60	38	37.52	112	39.95	3.4	92.8	2.2	1.4	3.4	11.2	1,5
61	38	37.51	112	40.08	3.3	93.6	2.0	1.3	3.3	10.7	1,5
62	38	36.38	112	33.13	4.8	100.4	12.3	7.7	4.8	15.7	1,7
63	38	35.93	112	33.68	5.2	105.1	11.7	7.3	5.2	16.9	1,5
64	38	28.01	112	44.91	4.9	195.8	18.4	11.5	4.9	16.2	1,7,8
65	38	35.14	112	34.78	3.6	115.0	10.7	6.7	3.6	11.9	1,7,8
66	38	37.77	112	33.88	6.7	88.2	11.0	6.9	6.7	21.8	1,7,8
67	38	41.24	112	33.81	6.4	58.6	13.0	8.1	6.4	20.9	1,6
68	38	36.78	112	33.60	2.9	97.4	11.5	7.2	2.9	9.6	1,5
69	38	37.09	112	39.71	5.0	109.5	2.7	1.7	5.0	16.4	1,7,8
70	38	37.07	112	32.53	4.8	94.2	13.0	8.1	4.8	15.7	1,5
71	38	37.03	112	32.12	5.7	94.3	13.6	8.5	5.7	18.8	1,5
72	38	37.08	112	32.18	5.7	93.9	13.5	8.4	5.7	18.8	1,5
73	38	39.01	112	32.06	6.7	79.0	13.9	8.7	6.7	21.8	1,6,7
74	38	36.78	112	34.09	2.3	97.9	10.8	6.8	2.3	7.4	1,5
75	38	37.07	112	34.95	1.4	95.7	9.5	5.9	1.4	4.5	1,7,8

COMMENTS:

- |   |                                  |
|---|----------------------------------|
| 1. LOCAL EVENT, 0-25 KM (0-16 MILES)            | 5. FAIR TO EXCELLENT ONSETS      |
| 2. NEAR REGIONAL EVENT, 25-100 KM (16-65 MILES) | 6. POOR TO FAIR ONSETS           |
| 3. REGIONAL EVENT, 100-1000 KM (65-600 MILES)   | 7. POOR AND EXCELLENT ONSETS     |
| 4. TELESEISM, +1000 KM (+600 MILES)             | 8. EMERGENT AND/OR DEAD TRACE(S) |

Table 1 (Continued). Cove Creek 1 Epicenter and Hypocenter Summary.

EVENT	LATITUDE		LONGITUDE		DEPTH KM	DIRECTION DEG	DISTANCE		DEPTH		COMMENT
	DEG	MIN	DEG	MIN			KM	MILE	KM	KFT	
76	38	37.12	112	34.66	1.4	94.9	9.9	6.2	1.4	4.5	1,7,8
77	38	36.09	112	33.98	2.2	104.2	11.2	7.0	2.2	7.3	1,7,8
78	38	36.46	112	33.46	6.8	100.1	11.8	7.4	6.8	22.3	1,7,8
79	38	35.94	112	33.18	1.9	104.2	12.4	7.8	1.9	6.3	1,7,8
80	38	38.11	112	33.84	4.8	84.9	11.1	6.9	4.8	15.8	1,7,8
81	38	37.58	112	33.54	3.9	90.0	11.5	7.2	3.9	12.7	1,7,8
82	38	37.72	112	33.81	6.2	88.7	11.1	6.9	6.2	20.2	1,6
83	38	37.77	112	38.58	2.3	85.2	4.2	2.6	2.3	7.6	1,7,8
84	38	36.19	112	35.88	1.0	107.7	8.5	5.3	1.0	3.1	1,5,8
85	38	37.76	112	41.61	5.0	328.1	.4	.3	5.0	16.4	1,7,8
86	38	38.68	112	34.43	6.5	78.7	10.4	6.5	6.5	21.3	1,5,8
87	38	37.20	112	42.82	4.1	250.6	2.1	1.3	4.1	13.3	1,7,8
88	38	39.66	112	7.80	?	85.5	49.0	30.6	?	?	2,7,8
89	38	41.74	112	34.76	8.7	51.6	12.4	7.8	8.7	28.5	1,7,8
90	38	36.73	112	34.52	2.3	98.9	10.2	6.4	2.3	7.6	1,7,8
91	38	42.20	112	31.97	2.9	58.2	16.2	10.1	2.9	9.4	1,5,8
92	38	41.90	112	32.63	2.7	58.0	15.1	9.4	2.7	9.0	1,6,8
93	38	34.86	112	39.34	5.0	148.6	5.9	3.7	5.0	16.4	1,5,8
94	38	36.68	112	31.05	5.2	96.3	15.2	9.5	5.2	17.1	1,7,8
95	38	35.91	112	29.94	3.0	100.5	17.0	10.6	3.0	9.8	1,5,8
96	38	34.30	112	37.55	9.2	136.9	8.3	5.2	9.2	30.2	1,7,8
97	38	43.50	112	34.71	6.7	41.8	14.7	9.2	6.7	21.9	1,5
98	38	46.27	112	23.99	?	57.6	30.0	18.8	?	?	2,6,8
99	38	14.57	112	45.62	?	188.1	43.0	26.9	?	?	2,6,8
100	38	43.62	112	30.11	2.9	55.8	19.9	12.4	2.9	9.4	1,5,8

COMMENTS:

- |   |                                  |
|---|----------------------------------|
| 1. LOCAL EVENT, 0-25 KM (0-16 MILES)            | 5. FAIR TO EXCELLENT ONSETS      |
| 2. NEAR REGIONAL EVENT, 25-100 KM (16-65-MILES) | 6. POOR TO FAIR ONSETS           |
| 3. REGIONAL EVENT, 100-1000 KM (65-600 MILES)   | 7. POOR AND EXCELLENT ONSETS     |
| 4. TELESEISM, +1000 KM (+600 MILES)             | 8. EMERGENT AND/OR DEAD TRACE(S) |

Table 1 (Continued). Cove Creek 1 Epicenter and Hypocenter Summary.

EVENT	LATITUDE		LONGITUDE		DEPTH KM	DIRECTION DEG	DISTANCE		DEPTH		COMMENT
	DEG	MIN	DEG	MIN			KM	MILE	KM	KFT	
101	38	37.40	112	39.89	3.6	98.5	2.3	1.4	3.8	11.9	1.5
102	38	41.86	112	34.01	6.9	53.8	13.4	8.4	6.9	22.6	1.5
103	38	36.64	112	35.03	1.7	100.6	9.5	5.9	1.7	5.6	1.5, 8
104	38	38.06	112	31.83	?	86.4	14.0	8.8	?	?	1.5
105	38	36.67	112	34.04	4.2	98.9	10.9	6.8	4.2	13.6	1.5
106	38	36.95	112	32.68	3.2	95.2	12.8	8.0	3.2	10.4	1.5
107	38	36.51	112	33.38	2.1	99.6	11.9	7.4	2.1	7.0	1.5
108	38	36.99	112	33.99	2.2	95.7	10.9	6.8	2.2	7.3	1.7
109	40	42.39	111	53.32	?	16.6	241.0	150.6	?	?	3.6
110	38	39.75	112	32.51	5.6	72.8	13.6	8.5	5.6	18.3	1.5
111	38	42.21	112	31.41	4.9	59.6	16.9	10.6	4.9	16.2	1.5
112	38	39.40	112	33.31	1.9	74.1	12.3	7.7	1.9	6.1	1.7
113	38	42.07	112	31.71	1.0	59.5	16.4	10.3	1.0	3.3	1.7
114	38	36.73	112	33.61	2.8	97.8	11.5	7.2	2.8	9.2	1.5
115	38	38.51	112	32.86	1.0	82.2	12.6	7.9	1.0	3.2	1.5
116	38	36.04	112	31.74	2.5	101.4	14.4	9.0	2.5	8.1	1.5
117	38	44.08	112	9.42	?	75.5	48.0	30.0	?	?	2.5
118	38	39.41	112	35.20	1.2	69.6	9.7	6.1	1.2	4.0	1.5
119	38	37.76	112	41.61	5.0	328.1	.4	.3	5.0	16.4	1.6
120	38	37.16	112	33.97	.9	94.1	10.9	6.8	.9	2.9	1.5
121	38	37.02	112	34.61	2.1	96.0	10.0	6.3	2.1	6.8	1.5
122	38	37.20	112	33.48	2.7	93.5	11.6	7.3	2.7	9.0	1.5
123	38	37.26	112	33.34	1.8	92.9	11.8	7.4	1.8	6.0	1.7
124	38	36.01	112	35.37	2.7	108.2	9.3	5.8	2.7	8.9	1.7
125	38	37.46	112	33.19	?	91.1	12.0	7.5	?	?	1.7, 8

COMMENTS:

- |   |                                  |
|---|----------------------------------|
| 1. LOCAL EVENT, 0-25 KM (0-16 MILES)            | 5. FAIR TO EXCELLENT ONSETS      |
| 2. NEAR REGIONAL EVENT, 25-100 KM (16-65 MILES) | 6. POOR TO FAIR ONSETS           |
| 3. REGIONAL EVENT, 100-1000 KM (65-600 MILES)   | 7. POOR AND EXCELLENT ONSETS     |
| 4. TELESEISM, +1000 KM (+600 MILES)             | 8. EMERGENT AND/OR DEAD TRACE(S) |

Table 1. (Continued). Cove Creek 1 Epicenter and Hypocenter Summary.

EVENT	LATITUDE		LONGITUDE		DEPTH KM	DIRECTION DEG	DISTANCE		DEPTH		COMMENTS
	DEG	MIN	DEG	MIN			KM	MILE	KM	KFT	
126	38	37.35	112	33.75	2.4	92.2	11.2	7.0	2.4	7.8	1,5
127	38	36.15	112	33.40	2.7	102.8	12.0	7.5	2.7	8.8	1,5
128	38	37.69	112	33.47	3.6	89.0	11.6	7.3	3.6	11.8	1,5
129	38	36.21	112	33.73	1.4	102.7	11.5	7.2	1.4	4.5	1,5
130	38	37.57	112	33.67	2.6	90.1	11.3	7.1	2.6	8.7	1,7,8
131	38	37.51	112	33.95	3.5	90.7	10.9	6.8	3.5	11.5	1,5
132	38	37.91	112	33.27	2.9	87.1	11.9	7.4	2.9	9.4	1,7,8
133	38	38.17	112	34.54	6.4	83.8	10.1	6.3	6.4	21.1	1,7,8
134	38	43.44	112	33.83	2.6	45.6	15.5	9.7	2.6	8.4	1,5,8
135	38	42.53	112	33.36	2.6	52.1	14.9	9.3	2.6	8.4	1,5,8
136	38	42.61	112	33.88	2.8	49.8	14.4	9.0	2.8	9.2	1,5,8
137	38	37.41	112	32.16	6.3	91.3	13.5	8.4	6.3	20.8	1,6,8
138	38	37.75	112	34.30	.9	88.3	10.4	6.5	.9	3.1	1,7,8
139	38	37.17	112	34.04	5.0	94.0	10.8	6.8	5.0	16.4	1,7,8
140	38	36.84	112	33.73	1.6	97.0	11.3	7.1	1.6	5.2	1,5
141	38	37.65	112	34.23	1.0	89.3	10.5	6.6	1.0	3.3	1,5,8
142	?		?		?	?	11.0	6.9	?	?	1,8
143	39	14.00	123	48.23	?	274.0	966.0	603.8	?	?	4,6
144	36	16.67	111	46.41	?	162.7	273.0	170.6	?	?	3,5,8
145	38	37.52	112	39.88	3.6	92.8	2.3	1.4	3.6	11.7	1,5
146	38	41.50	112	33.37	4.6	58.3	13.8	8.6	4.6	15.0	1,5
147	38	40.97	112	33.14	6.8	62.6	13.6	8.5	6.8	22.2	1,6,8
148	38	40.70	112	35.83	7.7	54.7	10.0	6.3	7.7	25.2	1,6,8
149	38	37.05	112	32.46	3.0	94.3	13.1	8.2	3.0	9.7	1,5
150	40	12.68	111	33.78	?	28.9	201.0	125.6	?	?	3,6,8

COMMENTS:

- |   |                                  |
|---|----------------------------------|
| 1. LOCAL EVENT, 0-25 KM (0-16 MILES)            | 5. FAIR TO EXCELLENT ONSETS      |
| 2. NEAR REGIONAL EVENT, 25-100 KM (16-65 MILES) | 6. POOR TO FAIR ONSETS           |
| 3. REGIONAL EVENT, 100-1000 KM (65-600 MILES)   | 7. POOR AND EXCELLENT ONSETS     |
| 4. TELESEISM, +1000 KM (+600 MILES)             | 8. EMERGENT AND/OR DEAD TRACE(S) |

Table 1 (Continued). Cove Creek 1 Epicenter and Hypocenter Summary.

EVENT	LATITUDE		LONGITUDE		DEPTH	DIRECTION	DISTANCE		DEPTH		COMMENT
	DEG	MIN	DEG	MIN	KM	DEG	KM	MILE	KM	KFT	
151	38	57.03	112	33.64	3.2	95.1	11.4	7.1	3.2	10.6	1,7,8

COMMENTS:

- |   |                                  |
|---|----------------------------------|
| 1. LOCAL EVENT, 0-25 KM (0-16 MILES)            | 5. FAIR TO EXCELLENT ONSETS      |
| 2. NEAR REGIONAL EVENT, 25-100 KM (16-65 MILES) | 6. POOR TO FAIR ONSETS           |
| 3. REGIONAL EVENT, 100-1000 KM (65-600 MILES)   | 7. POOR AND EXCELLENT ONSETS     |
| 4. TELESEISM, +1000 KM (+600 MILES)             | 8. EMERGENT AND/OR DEAD TRACE(S) |



Table 2. Cove Creek 2 Epicenter and Hypocenter Summary.

ARRAY CENTER: LATITUDE 38 36.92      LONGITUDE 112 35.07

EVENT	LATITUDE		LONGITUDE		DEPTH KM	DIRECTION DEG	DISTANCE		DEPTH		COMMENTS
	DEG	MIN	DEG	MIN			KM	MILE	KM	KFT	
1	38	35.62	112	33.73	4.5	141.1	3.1	1.9	4.5	14.9	1,5,8
2	38	35.68	112	33.74	4.4	139.8	3.0	1.9	4.4	14.3	1,5,8
3	38	36.92	112	34.17	3.0	90.0	1.3	.8	3.0	9.9	1,5,8
4	38	36.92	112	34.31	3.3	90.0	1.1	.7	3.3	10.7	1,5,8
5	38	36.43	112	34.16	3.5	124.7	1.6	1.0	3.5	11.4	1,5,8
6	?	?	?	?	?	93.9	?	?	?	?	4,6,8
7	38	36.36	112	33.98	3.3	123.3	1.9	1.2	3.3	10.8	1,5,8
8	?	?	?	?	?	91.6	?	?	?	?	4,6,8
9	?	?	?	?	?	?	?	?	?	?	4,8
10	39	29.05	111	36.75	?	41.1	128.0	80.0	?	?	3,6,8
11	38	35.03	112	34.49	2.7	166.5	3.6	2.3	2.7	9.0	1,7,8
12	38	7.25	112	20.22	?	158.5	59.0	36.9	?	?	2,6,8
13	38	7.92	112	18.21	?	155.4	59.0	36.9	?	?	2,6,8
14	38	7.85	112	18.40	?	155.7	59.0	36.9	?	?	2,6,8
15	38	10.16	112	15.67	?	150.3	57.0	35.6	?	?	2,6,8
16	38	9.32	112	17.67	?	153.6	57.0	35.6	?	?	2,5,8
17	38	36.41	112	33.48	4.1	112.2	2.5	1.6	4.1	13.6	1,6,8
18	38	15.49	112	53.66	?	214.3	48.0	30.0	?	?	2,6,8
19	38	35.33	112	34.41	2.9	161.9	3.1	1.9	2.9	9.4	1,5,8
20	?	?	?	?	?	56.2	?	?	?	?	4,6,8
21	38	36.51	112	36.27	3.5	246.6	1.9	1.2	3.5	11.6	1,5,8
22	38	40.27	112	32.28	4.1	33.2	7.4	4.6	4.1	13.6	1,5,8
23	38	37.78	112	36.98	6.1	299.9	3.2	2.0	6.1	20.1	1,5,8
24	38	36.92	112	34.11	4.6	90.0	1.4	.9	4.6	15.1	1,5,8
25	38	37.73	112	36.86	5.2	300.0	3.0	1.9	5.2	17.0	1,5,8

COMMENTS:

- |   |                                  |
|---|----------------------------------|
| 1. LOCAL EVENT, 0-25 KM (0-16 MILES)            | 5. FAIR TO EXCELLENT ONSETS      |
| 2. NEAR REGIONAL EVENT, 25-100 KM (16-65 MILES) | 6. POOR TO FAIR ONSETS           |
| 3. REGIONAL EVENT, 100-1000 KM (65-600 MILES)   | 7. POOR AND EXCELLENT ONSETS     |
| 4. TELESEISM, +1000 KM (+600 MILES)             | 8. EMERGENT AND/OR DEAD TRACE(S) |
|   | 9. DISTANT MINE BLAST (+200 KM)  |

Table 2 (Continued). Cove Creek 2 Epicenter and Hypocenter Summary.

EVENT	LATITUDE		LONGITUDE		DEPTH KM	DIRECTION DEG	DISTANCE		DEPTH		COMMENT
	DEG	MIN	DEG	MIN			KM	MILE	KM	KFT	
26	38	9.59	112	17.00	?	152.5	57.0	35.6	?	?	2,5
27		?		?	?	288.2	?	?	?	?	4,8
28	38	36.29	112	33.62	4.1	118.8	2.4	1.5	4.1	13.4	1,5
29		?		?	?	65.0	?	?	?	?	4,8
30	41	40.07	111	46.09	?	11.6	346.0	216.3	?	?	3,8
31	38	36.92	112	34.45	4.4	90.0	.9	.6	4.4	14.3	1,5
32	38	36.41	112	36.21	3.6	240.4	1.9	1.2	3.6	11.9	1,5
33		?		?	?	354.7	?	?	?	?	4,8
34	38	38.43	112	31.80	3.5	59.6	5.5	3.4	3.5	11.3	1,5,8
35	38	18.77	116	26.28	?	264.3	338.0	211.3	?	?	3,8
36	38	36.04	112	33.77	5.0	130.8	2.5	1.6	5.0	16.4	1,7,8
37	39	25.40	111	58.61	?	30.4	104.0	65.0	?	?	2,5
38	38	43.31	112	32.74	3.5	15.9	12.3	7.7	3.5	11.3	1,5
39	38	47.10	112	32.90	6.7	9.5	<del>19.1</del>	11.9	6.7	22.0	1,6,8
40	39	1.22	111	46.87	?	57.2	83.0	51.9	?	?	2,6,8
41	38	37.37	112	33.09	3.5	73.8	3.0	1.9	3.5	11.5	1,7,8
42	38	36.46	112	34.06	3.2	120.2	1.7	1.1	3.2	10.4	1,7,8
43	38	43.14	112	30.60	6.8	29.4	13.2	8.3	6.8	22.4	1,5
44	38	42.31	112	31.25	8.0	29.1	11.4	7.1	8.0	26.2	1,6
45	38	35.19	112	39.05	5.0	241.0	6.6	4.1	5.0	16.4	1,7,8
46		?		?	?	255.8	?	?	?	?	4,8
47	38	37.75	112	33.98	.5	45.9	2.2	1.4	.5	1.8	1,7,8
48		?		?	?	?	?	?	?	?	4,8
49	38	37.34	112	34.11	3.0	60.7	1.6	1.0	3.0	9.9	1,7,8
50	38	36.69	112	34.52	4.3	118.1	.9	.6	4.3	14.2	1,7,8

## COMMENTS:

- |   |                                  |
|---|----------------------------------|
| 1. LOCAL EVENT, 0-25 KM (0-16 MILES)            | 5. FAIR TO EXCELLENT ONSETS      |
| 2. NEAR REGIONAL EVENT, 25-100 KM (16-65 MILES) | 6. POOR TO FAIR ONSETS           |
| 3. REGIONAL EVENT, 100-1000 KM (65-600 MILES)   | 7. POOR AND EXCELLENT ONSETS     |
| 4. TELESEISM, +1000 KM (+600 MILES)             | 8. EMERGENT AND/OR DEAD TRACE(S) |
|   | 9. DISTANT MINE BLAST (+200 KM)  |

Table 2 (Continued). Cove Creek 2 Epicenter and Hypocenter Summary.

EVENT	LATITUDE		LONGITUDE		DEPTH KM	DIRECTION DEG	DISTANCE		DEPTH		COMMENT
	DEG	MIN	DEG	MIN			KM	MILE	KM	KFT	
51	38	41.69	112	31.82	6.7	28.1	10.0	6.3	6.7	22.1	1,6,8
52	38	36.77	112	34.05	4.0	100.6	1.5	.9	4.0	13.1	1,5
53	38	38.20	112	7.56	?	86.6	40.0	25.0	?	?	2,6,8
54	38	36.92	112	34.11	3.2	90.0	1.4	.9	3.2	10.4	1,5
55	38	46.13	112	4.13	?	69.2	48.0	30.0	?	?	2,5
56	38	36.72	112	34.00	3.9	103.6	1.6	1.0	3.9	12.9	1,5
57	38	46.60	112	36.28	?	354.4	18.0	11.3	?	?	1,6,8
58	38	37.38	112	32.88	2.6	74.9	3.3	2.1	2.6	8.5	1,7,9
59	39	29.73	111	14.36	?	50.0	152.0	95.0	?	?	3,8,9
60	40	39.18	111	39.08	?	19.5	240.0	150.0	?	?	3,6,8,9
61	40	46.40	111	30.06	?	21.2	257.0	160.6	?	?	3,5,9
62	?	?	?	?	?	?	241.0	150.6	?	?	3,8,9
63	38	37.30	112	37.57	4.4	280.9	3.7	2.3	4.4	14.4	1,6,8,9
64	?	?	?	?	?	?	17.0	10.6	?	?	1,8,9
65	38	34.88	112	9.03	?	95.7	38.0	23.8	?	?	2,6,8,9
66	38	41.89	112	33.41	5.0	14.7	9.5	5.9	5.0	16.4	1,5,9
67	38	38.97	112	34.90	1.3	3.8	3.8	2.4	1.3	4.3	1,7,8,9
68	38	42.53	112	38.14	4.1	336.8	11.3	7.1	4.1	13.6	1,5,9
69	?	?	?	?	?	?	14.0	8.8	?	?	1,8,9
70	38	33.64	112	7.15	?	98.5	41.0	25.6	?	?	2,7,9
71	38	43.15	112	31.24	10.0	25.8	12.8	8.0	10.0	32.7	1,5,9
72	38	36.92	112	34.52	3.0	90.0	.8	.5	3.0	9.9	1,7,9
73	38	35.68	112	34.90	5.0	173.9	2.3	1.4	5.0	16.4	1,5,9
74	38	45.17	112	34.28	6.6	4.3	15.3	9.6	6.6	21.6	1,5,8,9
75	38	42.43	112	31.26	8.0	28.4	11.6	7.3	8.0	26.2	1,5,9

COMMENTS:

- |   |                                  |
|---|----------------------------------|
| 1. LOCAL EVENT, 0-25 KM (0-16 MILES)            | 5. FAIR TO EXCELLENT ONSETS      |
| 2. NEAR REGIONAL EVENT, 25-100 KM (16-65 MILES) | 6. POOR TO FAIR ONSETS           |
| 3. REGIONAL EVENT, 100-1000 KM (65-600 MILES)   | 7. POOR AND EXCELLENT ONSETS     |
| 4. TELESEISM, +1000 KM (+600 MILES)             | 8. EMERGENT AND/OR DEAD TRACE(S) |
|   | 9. DISTANT MINE BLAST (+200 KM)  |

Table 2 (Continued). Cove Creek 2 Epicenter and Hypocenter Summary.

EVENT	LATITUDE		LONGITUDE		DEPTH KM	DIRECTION DEG	DISTANCE		DEPTH		COMMENTS
	DEG	MIN	DEG	MIN			KM	MILE	KM	KFT	
76	38	35.36	112	34.30	1.5	158.8	3.1	1.9	1.5	5.0	1,7,9
77	38	38.27	112	32.16	4.6	59.4	4.9	3.1	4.6	15.0	1,5,9
78	40	9.01	111	31.97	?	28.0	193.0	120.6	?	?	3,8,9
79	38	35.64	112	38.94	6.4	247.2	6.1	3.8	6.4	21.1	1,6,9
80	38	36.10	112	33.70	2.6	127.5	2.5	1.6	2.6	8.7	1,5,9
81	?		?		?	243.7	?	?	?	?	8,9
82	?		?		?	?	19.0	11.9	?	?	1,8,9
83	?		?		?	?	12.0	7.5	?	?	1,8,9
84	38	37.61	112	33.92	3.9	52.4	2.1	1.3	3.9	12.8	1,5,9
85	38	37.77	112	32.92	3.9	63.3	3.5	2.2	3.9	12.8	1,5,9
86	38	42.31	112	38.27	6.9	335.0	11.0	6.9	6.9	22.8	1,5,9
87	38	37.38	112	32.95	4.6	74.4	3.2	2.0	4.6	14.9	1,5,9
88	38	36.92	112	34.52	1.9	90.0	.8	.5	1.9	6.1	1,6,8,9
89	38	35.47	112	34.88	3.4	174.1	2.7	1.7	3.4	11.0	1,7,8,9
90	38	45.51	112	33.80	4.6	6.6	16.0	10.0	4.6	15.1	1,5,9
91	?		?		?	?	11.0	6.9	?	?	1,8,9
92	38	37.76	112	32.76	4.7	65.3	3.7	2.3	4.7	15.4	1,5,9
93	38	37.03	112	33.35	3.9	85.4	2.5	1.6	3.9	12.9	1,7,9
94	38	37.66	112	32.48	6.1	70.1	4.0	2.5	6.1	19.9	1,6,8,9
95	38	36.14	112	33.75	2.8	127.2	2.4	1.5	2.8	9.2	1,8,9
96	40	41.13	111	44.41	?	17.5	241.0	150.6	?	?	3,5,9
97	38	42.03	112	6.16	?	77.3	43.0	26.9	?	?	2,7,8,9
98	38	49.08	112	33.58	2.6	5.5	22.6	14.1	2.6	8.6	1,5,9
99	38	38.26	112	34.90	3.1	5.6	2.5	1.6	3.1	10.3	1,8,9
100	38	38.26	112	34.90	3.0	5.6	2.5	1.6	3.0	10.0	1,7,8,9

## COMMENTS:

- |   |                                  |
|---|----------------------------------|
| 1. LOCAL EVENT, 0-25 KM (0-16 MILES)            | 5. FAIR TO EXCELLENT ONSETS      |
| 2. NEAR REGIONAL EVENT, 25-100 KM (16-65 MILES) | 6. POOR TO FAIR ONSETS           |
| 3. REGIONAL EVENT, 100-1000 KM (65-600 MILES)   | 7. POOR AND EXCELLENT ONSETS     |
| 4. TELESEISM, +1000-KM-(+600 MILES)             | 8. EMERGENT AND/OR DEAD TRACE(S) |
|   | 9. DISTANT MINE BLAST (+200 KM)  |

Table 2 (Continued). Cove Creek 2 Epicenter and Hypocenter Summary.

EVENT	LATITUDE		LONGITUDE		DEPTH KM	DIRECTION DEG	DISTANCE		DEPTH		COMMENTS
	DEG	MIN	DEG	MIN			KM	MILE	KM	KFT	
101	?		?		?	157.1	?	?	?	?	4,6,9
102	?		?		?	?	12.0	7.5	?	?	1,8,9
103	38	36.48	112	34.46	4.2	132.2	1.2	.8	4.2	13.7	1,6,8,9
104	38	37.77	112	32.99	2.3	62.5	3.4	2.1	2.3	7.5	1,5,9
105	?		?		?	?	265.0	165.6	?	?	3,8,9
106	40	42.57	112	45.58	?	356.3	233.0	145.6	?	?	3,6,8
107	33	46.98	111	22.94	?	168.6	547.0	341.9	?	?	3,5,8
108	38	36.04	112	33.17	2.2	120.4	3.2	2.0	2.2	7.3	1,7,8
109	38	41.35	112	31.63	6.6	31.3	9.6	6.0	6.6	21.7	1,5
110	38	43.00	112	33.12	2.1	14.1	11.6	7.3	2.1	7.0	1,5
111	38	42.45	112	32.69	3.7	18.6	10.8	6.8	3.7	12.1	1,6
112	38	35.61	112	35.90	5.8	206.5	2.7	1.7	5.8	18.9	1,7
113	38	35.83	112	35.97	3.0	212.8	2.4	1.5	3.0	9.9	1,5,8
114	39	24.44	111	1.64	?	56.9	161.0	100.6	?	?	3,6,8
115	38	34.39	112	29.07	5.0	118.3	9.9	6.2	5.0	16.4	1,7,8
116	38	8.95	110	38.84	?	107.0	177.0	110.6	?	?	3,6,8
117	38	35.67	112	34.25	6.6	152.9	2.6	1.6	6.6	21.7	1,7,8
118	38	44.46	112	31.08	7.2	22.6	15.1	9.4	7.2	23.6	1,5,8
119	?		?		?	?	?	?	?	?	4,8
120	40	57.15	111	35.67	?	18.1	273.0	170.6	?	?	3,8
121	38	41.36	112	31.51	6.8	32.2	9.7	6.1	6.8	22.3	1,5
122	38	37.82	112	32.79	3.4	63.2	3.7	2.3	3.4	11.1	1,5
123	38	37.15	112	35.84	2.0	291.0	1.2	.8	2.0	6.5	1,7,8
124	38	35.86	112	34.54	3.1	158.5	2.1	1.3	3.1	10.1	1,7,8
125	38	42.54	112	32.61	2.0	19.0	11.0	6.9	2.0	6.6	1,5

## COMMENTS:

- |   |                                  |
|---|----------------------------------|
| 1. LOCAL EVENT, 0-25 KM (0-16 MILES)            | 5. FAIR TO EXCELLENT ONSETS      |
| 2. NEAR REGIONAL EVENT, 25-100 KM (16-65 MILES) | 6. POOR TO FAIR ONSETS           |
| 3. REGIONAL EVENT, 100-1000 KM (65-600 MILES)   | 7. POOR AND EXCELLENT ONSETS     |
| 4. TELESEISM, +1000 KM (+600 MILES)             | 8. EMERGENT AND/OR DEAD TRACE(S) |
|   | 9. DISTANT MINE BLAST (+200 KM)  |

Table 2 (Continued). Cove Creek 2 Epicenter and Hypocenter Summary.

EVENT	LATITUDE		LONGITUDE		DEPTH KM	DIRECTION DEG	DISTANCE		DEPTH		COMMENT
	DEG	MIN	DEG	MIN			KM	MILE	KM	KFT	
126	38	35.90	112	32.26	3.4	114.9	4.5	2.8	3.4	11.2	1,7,8
127	?		?		?	?	322.0	201.3	?	?	3,8
128	38	40.49	112	34.28	6.6	9.9	6.7	4.2	6.6	21.6	1,7,8
129	38	31.13	112	2.86	?	102.9	48.0	30.0	?	?	2,7,8
130	38	40.79	112	34.07	2.5	11.5	7.3	4.6	2.5	8.0	1,7,8
131	38	36.64	112	35.97	1.3	248.2	1.4	.9	1.3	4.2	1,5,8
132	38	41.35	112	33.51	3.1	15.4	8.5	5.3	3.1	10.2	1,5,8
133	38	41.40	112	33.25	2.6	17.7	8.7	5.4	2.6	8.6	1,5,8
134	38	41.44	112	33.44	3.2	15.8	8.7	5.4	3.2	10.4	1,5,8
135	38	36.31	112	32.93	.8	110.1	3.3	2.1	.8	2.5	1,5,8
136	40	27.06	112	2.76	?	12.8	209.0	130.6	?	?	3,5
137	39	50.88	114	24.84	?	310.9	209.0	130.6	?	?	3,6,8
138	38	36.23	112	32.61	4.0	109.8	3.8	2.4	4.0	13.2	1,7,8
139	38	35.86	112	32.51	4.1	117.8	4.2	2.6	4.1	13.5	1,8
140	38	35.93	112	32.62	4.3	117.4	4.0	2.5	4.3	14.0	1,7,8
141	38	36.03	112	32.26	5.0	112.0	4.4	2.8	5.0	16.4	1,7,8
142	38	35.90	112	32.64	4.2	118.1	4.0	2.5	4.2	13.8	1,5,8
143	38	35.98	112	32.59	4.2	115.8	4.0	2.5	4.2	13.6	1,5
144	38	35.70	112	33.71	3.8	138.7	3.0	1.9	3.8	12.3	1,8
145	38	35.99	112	32.36	5.0	113.6	4.3	2.7	5.0	16.4	1,7,8
146	38	33.96	112	34.26	5.0	167.9	5.6	3.5	5.0	16.4	1,6,8
147	38	36.06	112	32.62	4.2	114.0	3.9	2.4	4.2	13.6	1,5
148	38	36.04	112	32.63	4.1	114.6	3.9	2.4	4.1	13.6	1,5
149	38	7.48	113	9.46	?	222.6	74.0	46.3	?	?	2,8
150	38	36.74	112	34.13	3.8	104.1	1.4	.9	3.8	12.5	1,5,8

## COMMENTS:

- |   |                                  |
|---|----------------------------------|
| 1. LOCAL EVENT, 0-25 KM (0-16 MILES)            | 5. FAIR TO EXCELLENT ONSETS      |
| 2. NEAR REGIONAL EVENT, 25-100 KM (16-65 MILES) | 6. POOR TO FAIR ONSETS           |
| 3. REGIONAL EVENT, 100-1000 KM (65-600 MILES)   | 7. POOR AND EXCELLENT ONSETS     |
| 4. TELESEISM, +1000 KM (+600 MILES)             | 8. EMERGENT AND/OR DEAD TRACE(S) |
|   | 9. DISTANT MINE BLAST (+200 KM)  |

Table 2 (Continued): Cove Creek 2 Epicenter and Hypocenter Summary.

EVENT	LATITUDE		LONGITUDE		DEPTH KM	DIRECTION DEG	DISTANCE		DEPTH		COMMENT
	DEG	MIN	DEG	MIN			KM	MILE	KM	KFT	
151	38	35.93	112	32.62	3.9	117.3	4.0	2.5	3.9	12.9	1,5,8
152	38	35.92	112	32.47	3.8	116.1	4.2	2.6	3.8	12.6	1,5
153	41	6.86	112	3.91	?	9.1	281.0	175.6	?	?	3,5,8
154	40	38.67	111	35.26	?	20.8	241.0	150.6	?	?	3,6,8
155	37	57.07	112	30.74	?	175.1	74.0	46.3	?	?	2,6,8
156	38	32.53	112	14.47	?	105.2	31.0	19.4	?	?	3,6
157	38	41.25	112	33.58	3.1	15.1	8.3	5.2	3.1	10.2	1,7
158	38	42.02	112	34.28	5.0	7.0	9.5	5.9	5.0	16.4	1,7,8
159	38	36.92	112	34.59	3.8	90.0	7	.4	3.8	12.5	1,5
160	40	38.51	111	34.71	?	21.0	241.0	150.6	?	?	3,8
161		?		?	?	?	313.0	195.6	?	?	3,8
162	38	36.17	112	35.21	5.5	188.6	1.4	.9	5.5	17.9	1,5,8
163	36	24.28	110	51.43	?	148.1	289.0	180.6	?	?	3,6
164	38	36.92	112	33.49	3.2	90.0	2.3	1.4	3.2	10.5	1,5
165	38	42.10	112	33.36	3.1	14.5	9.9	6.2	3.1	10.0	1,7
166	40	37.36	112	13.46	?	7.9	225.0	140.6	?	?	3,8
167	38	13.24	116	47.48	?	263.2	370.0	231.3	?	?	3,6
168	38	42.20	112	33.07	2.0	16.6	10.2	6.4	2.0	6.6	1,7
169	38	41.26	112	33.62	3.6	14.7	8.3	5.2	3.6	11.6	1,5
170	38	37.73	112	35.87	3.4	322.4	1.9	1.2	3.4	11.1	1,5
171	38	38.89	112	33.77	2.0	27.4	4.1	2.6	2.0	6.4	1,7,8
172	39	27.63	111	52.69	?	33.1	112.0	70.0	?	?	3,8
173	38	12.98	112	3.34	?	133.8	64.0	40.0	?	?	2,7,8
174	40	30.95	111	59.70	?	13.5	217.0	135.6	?	?	3,5
175	38	36.96	112	32.66	2.5	88.8	3.5	2.2	2.5	8.2	1,8

COMMENTS:

- |   |                                  |
|---|----------------------------------|
| 1. LOCAL EVENT, 0-25 KM (0-16 MILES)            | 5. FAIR TO EXCELLENT ONSETS      |
| 2. NEAR REGIONAL EVENT, 25-100 KM (16-65 MILES) | 6. POOR TO FAIR ONSETS           |
| 3. REGIONAL EVENT, 100-1000 KM (65-600 MILES)   | 7. POOR AND EXCELLENT ONSETS     |
| 4. TELESEISM, +1000 KM (+600 MILES)             | 8. EMERGENT AND/OR DEAD TRACE(S) |
|   | 9. DISTANT MINE BLAST (+200 KM)  |

Table 2 (Continued). Cove Creek 2 Epicenter and Hypocenter Summary.

EVENT	LATITUDE		LONGITUDE		DEPTH KM	DIRECTION DEG	DISTANCE		DEPTH		COMMENT
	DEG	MIN	DEG	MIN			KM	MILE	KM	KFT	
176	38	35.93	112	32.62	4.0	117.3	4.0	2.5	4.0	13.2	1,5
177	38	36.02	112	34.19	2.8	142.6	2.1	1.3	2.8	9.1	1,5,8
178	?	?	?	?	?	?	?	?	?	?	1,8
179	?	?	?	?	?	287.0	?	?	?	?	4,8
180	38	34.64	112	34.00	4.4	159.8	4.5	2.8	4.4	14.4	1,7,8
181	38	41.40	112	33.51	6.5	15.3	8.6	5.4	6.5	21.4	1,8
182	?	?	?	?	?	?	?	?	?	?	4,8
183	40	31.28	112	1.50	?	12.8	217.0	135.6	?	?	3,6
184	38	31.29	112	33.68	10.6	169.1	10.6	6.6	10.6	34.9	1,7,8
185	?	?	?	?	?	?	9.0	5.6	?	?	1,8
186	38	36.74	112	40.71	6.8	267.7	8.2	5.1	6.8	22.3	1,5
187	38	36.78	112	41.06	6.6	268.3	8.7	5.4	6.6	21.7	1,5,8
188	38	36.48	112	33.97	3.1	117.2	1.8	1.1	3.1	10.1	1,5,8
189	38	18.53	112	13.79	?	137.7	46.0	28.8	?	?	2,8
190	38	41.69	112	29.99	9.6	39.8	11.5	7.2	9.6	31.5	1,5,8
191	38	37.19	112	36.33	4.1	285.2	1.9	1.2	4.1	13.5	1,5

COMMENTS:

- |   |                                  |
|---|----------------------------------|
| 1. LOCAL EVENT, 0-25 KM (0-16 MILES)            | 5. FAIR TO EXCELLENT ONSETS      |
| 2. NEAR REGIONAL EVENT, 25-100 KM (16-65 MILES) | 6. POOR TO FAIR ONSETS           |
| 3. REGIONAL EVENT, 100-1000 KM (65-600 MILES)   | 7. POOR AND EXCELLENT ONSETS     |
| 4. TELESEISM, +1000 KM (+600 MILES)             | 8. EMERGENT AND/OR DEAD TRACE(S) |
|   | 9. DISTANT MINE BLAST (+200 KM)  |



Table 3. Cove Creek 3. Epicenter and Hypocenter Summary.

ARRAY CENTER: LATITUDE 38 28.92 LONGITUDE 112 51.57

EVENT	LATITUDE		LONGITUDE		DEPTH KM	DIRECTION DEG	DISTANCE		DEPTH		COMMENTS
	DEG	MIN	DEG	MIN			KM	MILE	KM	KFT	
1	?		?		?	51.4	?	?	?	?	4,5,
2	38	42.88	112	11.24	?	66.2	64.0	40.0	?	?	2,5,
3	38	36.69	112	35.03	?	59.1	28.0	17.5	?	?	2,5,
4	39	46.58	110	37.32	?	53.4	241.0	150.6	?	?	3,5
5	39	46.58	110	37.32	?	53.4	241.0	150.6	?	?	3,5
6	38	28.97	112	47.58	6.4	89.1	5.8	3.6	6.4	21.1	1,7,8
7	38	29.98	112	46.02	7.1	76.3	8.3	5.2	7.1	23.3	1,7,8
8	38	35.48	112	34.21	?	64.3	28.0	17.5	?	?	2,6
9	38	29.00	112	47.79	6.1	88.5	5.5	3.4	6.1	19.9	1,7,8
10	38	28.87	112	47.86	5.9	91.0	5.4	3.4	5.9	19.5	1,5
11	40	32.65	111	59.05	?	18.2	241.0	150.6	?	?	3,7,8
12	38	29.16	112	46.77	6.2	86.4	7.0	4.4	6.2	20.2	1,7,8
13	38	29.04	112	47.79	5.8	87.7	5.5	3.4	5.8	19.0	1,5
14	38	28.95	112	47.65	5.8	89.4	5.7	3.6	5.8	19.1	1,7,8
15	38	29.10	112	47.66	6.2	86.7	5.7	3.6	6.2	20.2	1,5,8
16	38	37.82	112	12.57	?	73.8	59.0	36.9	?	?	2,6,8
17	40	16.98	116	41.49	?	301.2	386.0	241.3	?	?	3,8
18	38	19.96	112	20.63	?	110.2	48.0	30.0	?	?	2,5
19	40	34.12	112	5.22	?	16.0	241.0	150.6	?	?	3,7,9
20	38	13.23	112	34.73	?	139.8	38.0	23.8	?	?	2,5,8
21	40	33.06	112	.73	?	17.6	241.0	150.6	?	?	3,5,8
22	40	34.36	112	6.34	?	15.6	241.0	150.6	?	?	3,7,8
23	37	49.66	113	21.80	?	211.3	85.0	53.1	?	?	2,8
24	38	28.66	112	47.73	5.9	94.9	5.6	3.5	5.9	19.3	1,7,8
25	37	49.38	112	59.23	?	188.7	74.0	46.3	?	?	2,5,8

COMMENTS:

- |   |                                  |
|---|----------------------------------|
| 1. LOCAL EVENT, 0-25 KM (0-16 MILES)            | 5. FAIR TO EXCELLENT ONSETS      |
| 2. NEAR REGIONAL EVENT, 25-100 KM (16-65 MILES) | 6. POOR TO FAIR ONSETS           |
| 3. REGIONAL EVENT, 100-1000 KM (65-600 MILES)   | 7. POOR AND EXCELLENT ONSETS     |
| 4. TELESEISM, +1000 KM (+600 MILES)             | 8. EMERGENT AND/OR DEAD TRACE(S) |
|   | 9. DISTANT MINE BLAST (+200 KM)  |

Table 3 (Continued). Cove Creek 3 Epicenter and Hypocenter Summary.

EVENT	LATITUDE		LONGITUDE		DEPTH KM	DIRECTION DEG	DISTANCE		DEPTH		COMMENT
	DEG	MIN	DEG	MIN			KM	MILE	KM	KFT	
26	38	29.02	112	47.72	5.7	88.1	5.6	3.5	5.7	18.7	1,5
27	38	28.96	112	47.79	5.8	89.2	5.5	3.4	5.8	18.9	1,5
28	38	28.97	112	47.79	5.7	89.0	5.5	3.4	5.7	18.6	1,5
29	38	28.99	112	47.72	5.9	88.7	5.6	3.5	5.9	19.5	1,5,8
30	38	29.02	112	47.72	5.8	88.1	5.6	3.5	5.8	19.0	1,7,8
31	38	29.08	112	47.59	6.0	87.1	5.8	3.6	6.0	19.7	1,5,8
32	38	29.06	112	47.59	6.0	87.5	5.8	3.6	6.0	19.6	1,5,8
33	38	29.03	112	47.58	6.0	88.0	5.8	3.6	6.0	19.7	1,7
34	38	29.05	112	47.65	6.1	87.6	5.7	3.6	6.1	19.9	1,5
35	38	29.04	112	47.45	6.1	87.9	6.0	3.8	6.1	20.0	1,5
36	38	29.06	112	47.65	6.0	87.4	5.7	3.6	6.0	19.7	1,5
37	39	20.51	112	23.00	?	23.4	104.0	65.0	?	?	2,6
38	40	32.93	112	.17	?	17.8	241.0	150.6	?	?	3,5,9

COMMENTS:

- |   |                                  |
|---|----------------------------------|
| 1. LOCAL EVENT, 0-25 KM (0-16 MILES)            | 5. FAIR TO EXCELLENT ONSETS      |
| 2. NEAR REGIONAL EVENT, 25-100 KM (16-65 MILES) | 6. POOR TO FAIR ONSETS           |
| 3. REGIONAL EVENT, 100-1000 KM (65-600 MILES)   | 7. POOR AND EXCELLENT ONSETS     |
| 4. TELESEISM, +1000 KM (+600 MILES)             | 8. EMERGENT AND/OR DEAD TRACE(S) |
|   | 9. DISTANT MINE BLAST (+200 KM)  |