



**Earthquake Hazards Program**

**MINING-INDUCED EVENTS IN THE EARTHQUAKE CATALOGS OF THE USGS/NEIC**

Longwall roof-collapses and non-planned mining-associated rockbursts and mine collapses have usually have been reported in regular USGS/NEIC earthquake catalogs if their magnitudes were of a size that they might affect estimates of seismic hazard in the regions in which they occur. Some large and otherwise atypical mining explosions might also be occasionally listed in the regular USGS/NEIC earthquake catalogs. Events that are listed in regular earthquake catalogs of the USGS/NEIC are not listed in the catalogs of "Routine Mining Seismicity in the United States." Information on mining related seismic events that have been listed in the regular earthquake catalogs of the USGS/NEIC may be obtained from the [main USGS/NEIC website](#).

The following events were located in the conterminous U.S. in the period January 1973 through March 2000 and are listed as induced events in the earthquake catalogs of the USGS/NEIC. Cavity collapses associated with nuclear tests in the Nevada Test Site have been removed from the list. Almost all the events listed were thought to be induced by mining operations. The USGS/NEIC did not systematically tabulate U.S. mining-induced events until the mid-1980's. The list is given in the GSE2.0 format.

Date	Time	Latitude	Longitude	Depth	Ndef	Nsta	Gap	Mag1	N	Mag2	N	Mag3	N	Author	ID
rms	OT_Error	Smajor	Sminor	Az	Err	mdist	Mdist	Err		Err		Err		Quality	
1984/01/25	19:36:12	47.500	-116.000	1.0	4	4		ML 2.3						NEIC_PDE	
														si	
1984/06/12	04:48:54.1	39.143	-107.394	1.0	11	11		ML 3.0						NEIC_PDE	
	0.58													si	
1984/09/15	02:55:02.6	47.460	-115.987	1.0	10	10		ML 2.8						NEIC_PDE	
	0.55													si	
1986/03/12	16:32:56	47.470	-115.800	1.0	1	1		ML 2.0						NEIC_PDE	
														si	
1986/05/07	02:27:00.4	33.233	-87.361	1.0	26	26		mb 4.2	7	Mn 4.0		Mn 4.5		NEIC_PDE	
	0.81													si	
1987/11/19	06:37:28.8	47.411	-115.784	0.0	8	8		MD 2.7						NEIC_PDE	
	0.60													si	
1988/01/14	17:23:36.5	46.559	-89.621	5.0	12	12		Mn 3.6						NEIC_PDE	
	1.08													si	
1988/04/14	23:37:31.1	37.238	-81.987	0.0	11	11		mb 4.1	1	MD 4.0				NEIC_PDE	
														si	
1988/10/18	21:15:00.5	47.404	-115.850	0.0	32	32		ML 3.9		ML 3.5				NEIC_PDE	
	0.67													si	
1989/02/24	07:11:21	47.468	-115.798	0.0	5	5		MD 2.8						NEIC_PDE	
														si	
1989/02/28	17:31:50.8	33.643	-87.092	0.0	9	9		Mn 3.5						NEIC_PDE	
	0.97													si	
1989/03/02	22:05:41.7	47.526	-115.804	0.0	8	8		MD 3.2						NEIC_PDE	
	0.54													si	
1989/04/10	18:12:16	37.136	-82.068	0.0	10	10		mb 4.3	1	Mn 3.8				NEIC_PDE	
														si	
1989/08/13	20:16:02.9	33.632	-87.086	0.0	11	11		Mn 3.4						NEIC_PDE	
	0.96													si	
1990/01/04	06:18:35.4	47.463	-115.941	0.0	6	6		MD 2.7						NEIC_PDE	
	0.59													si	

1990/02/07 11:44:58.7 0.33	47.475	-115.980	0.0	16	16	ML 2.9			NEIC_PDE si
1990/11/08 10:02:12.1 0.64	36.858	-83.005	1.0	23	23	MD 2.7			NEIC_PDE si
1990/11/08 10:08:28.2 0.75	36.877	-83.011	1.0	25	25	MD 3.2			NEIC_PDE si
1991/11/05 16:18:49	44.350	-103.750	0.0	3	3	ML 2.5			NEIC_PDE si
1991/12/09 22:48:39.9 1.04	47.524	-115.953	1.0	8	8	ML 2.4			NEIC_PDE si
1991/12/11 21:37:03.4 0.60	47.480	-115.801	1.0	22	22	ML 3.0	ML 3.0		NEIC_PDE si
1993/01/21 09:01:20.4	39.712	-110.622	1.0	25	25	mb 3.4	1 ML 3.6		NEIC_PDE si
1993/10/14 21:19:29	47.502	-116.069	1.0	23	23	ML 2.9			NEIC_PDE si
1994/03/12 10:43:15.7 0.63	42.782	-77.876	1.0	23	23	Mn 3.5	Mn 3.6		NEIC_PDE si
1994/08/17 06:56:49	47.472	-115.778	1.0	57	57	ML 3.6	ML 4.1		NEIC_PDE si
1994/09/26 01:21:45.5 0.93	38.931	-107.484	1.0	15	15	ML 3.1			NEIC_PDE si
1994/11/02 02:05:44.4 0.53	38.901	-107.493	1.0	12	12	ML 2.8			NEIC_PDE si
1995/01/01 12:43:19.3 0.80	38.871	-107.448	1.0	13	13	ML 3.0			NEIC_PDE si
1995/02/03 15:26:10.6 0.97	41.529	-109.640	1.0	322	322	mb 5.3	96 Ms 4.6 4		NEIC_PDE si
1995/03/11 08:15:52.3 0.84	36.959	-83.133	1.0	27	27	mb 3.7	8 Mn 3.8		NEIC_PDE si
1995/03/11 09:50:04.4 0.46	36.990	-83.180	1.0	11	11	Mn 3.3			NEIC_PDE si
1995/03/14 22:13:47.7 0.79	38.884	-107.482	1.0	14	14	ML 2.9			NEIC_PDE si
1995/05/28 15:28:36.9 0.45	33.191	-87.827	1.0	7	7	Mn 3.4			NEIC_PDE si
1995/06/23 04:38:17.5	47.462	-115.765	2.0	31	31	ML 2.8	ML 2.9		NEIC_PDE si
1995/07/15 01:03:28.3 0.80	33.478	-87.665	1.0	7	7	Mn 3.3			NEIC_PDE si
1995/10/26 00:37:28.9 1.21	37.053	-83.121	1.0	48	48	mb 3.9	5 Mn 4.0 Mn 4.0		NEIC_PDE si
1996/02/09 02:01:29.2	47.471	-115.841	0.0	42	42	mb 3.2	1 ML 3.5		NEIC_PDE si
1996/04/19 08:50:14.0	36.981	-83.018	0.0	26	26	mb 3.9	6		NEIC_PDE

1.40										si
1996/04/25 20:56:29.1 0.30	47.443	-115.816	1.0	11	11	MD 3.0				NEIC_PDE si
1996/05/30 10:00:37.8	47.440	-115.820	1.0	12	12	ML 3.6				NEIC_PDE si
1996/06/29 19:30:42.6 1.20	37.187	-81.950	1.0	34	34	mb 4.1 15	Mn 3.9			NEIC_PDE si
1997/06/28 03:02:37.7 0.44	47.502	-115.815	2.0	43	43	ML 3.4	ML 3.1			NEIC_PDE si
1997/10/28 10:36:46.5 1.18	37.162	-82.025	1.0	21	21	Mn 3.4				NEIC_PDE si
1997/12/12 08:42:20.2 0.61	33.466	-87.306	1.0	21	21	mb 3.9 6	Mn 4.0			NEIC_PDE si
1999/01/18 07:00:53.4 1.00	33.405	-87.255	1.0	66	66	mb 4.8 18	Mn 4.0			NEIC_PDE si
1999/05/13 14:18:22.7	39.100	-94.700	5.0	9	9	Mn 3.0				NEIC_PDE si
1999/11/28 11:00:09.3 1.09	33.416	-87.253	1.0	20	20	mb 3.5 2	Mn 3.8			NEIC_PDE si
2000/01/30 14:46:51.3 1.06	41.464	-109.679	1.0	68	68	mb 4.4 10				NEIC_PDE si

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