TABLE 2.5-5

HISTORICAL EARTHQUAKE CATALOG FOR THE PACIFIC NORTHWEST REGION

August 1981

TABLE 2.5-5

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1.1 DESCRIPTION OF THE EARTHQUAKE CATALOG

The earthquake catalog contained in this table has been produced using Woodward-Clyde Consultants' Earthquake Data Bank. The catalog covers the following region:

Latitudes 42°N to 54°N
Longitudes 114° to 128°W

The catalog includes located earthquakes of all intensities greater than or equal to intensity III and all magnitudes greater than or equal to magnitude 3.0 that have been reported from the region through December 31, 1980 by the sources cited in the Source Code Reference List on page 2.5-5-4. The earliest earthquake reported by the sources for the region occurred on December 3, 1841. The sources selected are those that provide the most complete data listings for the region, including more obscure sources that provide relatively short lists of small microearthquakes in limited areas. All the data available from the selected sources before March 1, 1981, are included. The main sources used are the National Oceanic and Atmospheric Administration (NOAA); the University of Washington (Western and Eastern Washington Networks); and the Earth Physics Branch of the Canadian Department of Energy, Mines and Resources.

Data from the University of Washington Eastern Washington network for the first half of 1980 are not yet available. Western Washington data for 1978 and 1979 were received after the catalog had been completed.

Many earthquakes appear in two or more of the source listings. Therefore, the catalog was edited by seismologists and duplicate entries were deleted. Although the majority of duplicate entries are almost identical, in cases where the hypocentral solutions differ appreciably, a selection was made based on the amount of data available to each source agency and on geographical considerations. For example, a University of Washington entry for an earthquake that occurred within the coverage of one of their regional networks would be selected rather than Canadian or NOAA entries.

For certain early earthquakes, especially several pre-instrumental events, it is difficult to choose between alternative sources. In these cases a preferred solution

was chosen based on the available data, and only the preferred solution is listed. All the alternative solutions are listed in the previous catalog.*

Every attempt has been made to accurately reproduce the source material and obvious errors or questionable entries in the source listings have been investigated and, when necessary, corrected. However, the large volume of data obviously precludes exhaustive checking of every source listing, and the possibility of errors in the catalog cannot be completely eliminated. Particular attention was paid to verifying the magnitudes of eastern Washington earthquakes greater than magnitude 3 reported by the University of Washington. The magnitudes of these earthquakes appearing in the catalog were checked against the source listings; in several cases, the University of Washington Geophysics Program staff checked the source listings against original hypocenter solution computer runs. It is important to note that the quality of earthquake locations is not temporarily or spatially consistent from source to source, or even within each source.

2.1 EXPLANATION OF EARTHQUAKE CATALOG COLUMN HEADINGS

CAT. NO. — Sequential catalog number assigned to each earthquake.

DATE DAY-MO-YR — Date in Greenwich mean time unless noted otherwise in time column (usually as 'LT' for local time).

TIME (GMT) HR-MIN-SEC — Time in Greenwich mean time unless noted otherwise in time column (usually as 'LT' for local time).

LAT — Latitude, north or south as noted. When original sources have given the latitude or longitude in degrees, minutes, and seconds, or as fractions of a degree, these have been converted to decimal degrees. Although the catalog presents the coordinates in thousandths of a degree, it is important to bear in mind that this does not imply location accuracy to

*Woodward-Clyde Consultants, 1978, Earthquake catalog of the Northwestern United States and Canada 1841-1977: Report prepared for the Washington Public Power Supply System, Richland, Washington, 427 p.

that precision. In many cases the implicit accuracy is discernible from the coordinate. For example, if a latitude were originally reported as 23 1/4 N, the catalog would list it as 23.250N.

LONG	Longitude, east or west as noted (see note above).
SL	Source of the latitude and longitude if different from the main source (column "S"). Frequently, only a place name is given for an earthquake location in the original data. In many such cases, the coordinates of the place have been assigned to the earthquake by Woodward-Clyde Consultants. The characters 'W', 'W1', or 'W2' are placed in this column to indicate the degree of precision of the place, name, location, as follows: W nearest hundredth or thousandth degree; W1 nearest tenth degree; W2 nearest half degree.
INTEN (MM)	Maximum intensity, reported on the modified Mercalli scale of 1931, unless noted otherwise; for example, 'RF' indicates Rossi-Forel intensity scale.
MAG	Earthquake magnitude, usually reported as local Richter, body wave, or surface wave (see "SM" column).
SM	Source of magnitude, if different from the main source (column "S"), or magnitude scale, if known. See Section 4.1 for explanation of magnitude codes.
H (KM)	Hypocenter depth, in kilometers.
DIS (MI) (KM)	Epicentral distance from the site in miles or kilometers, as noted.
Q	Epicenter quality indication as reported in main source. These are not quality judgments assigned by Woodward-Clyde Consultants unless the main source for the event is Woodward-Clyde Consultants. (See also Sections 5.1 and 6.1).

approximately 13,000 y.b.p. (Mullineaux and others, 1975). Glacier Peak ash has not been positively identified in the vicinity of the site, but it has been reported in other localities in the Columbia Basin north and east of the site (Fryxell, 1965). The second ash identified in the site vicinity occurs locally interbedded and mixed with post-glacial eolian deposits that are stratigraphically above the Touchet beds. These ash deposits have been correlated with an ashfall from the eruption of Mount Mazama in Oregon that occured about 6,600 y.b.p. (Fryxell, 1965). None of the ash deposits, however, were noted during the geologic examinations of the WNP-2 or the WNP-1 and 4 excavations.

A period of renewed volcanic activity on Mt. St. Helens began in late March 1980, climaxed in a major eruption on May 18, 1980, and resulted in about 1 mm of ash fall at the site over a 9-hour period. Lesser eruptions of steam and ash followed on May 25 and June 12, but prevailing winds carried the respective plumes northwestward and southwestward from the mountain.

The potential effects of a hypothetical, "worst-case" ash fall at the WNP 1-2-4 site were evaluated, utilizing relevant data from the Mt. St. Helens eruptions and detailed studies made by Shannon & Wilson, (1976) for the Pebble Springs Nuclear Plant Site. The Pebble Springs site is located near Arlington, Oregon, approximately 65 miles southwest of the WNP1-2-4 site.

Potential Source of Volcanic Ash

There are ten major volcanic peaks of the Cascade Range (Figure 2.5-22). Even before the activity displayed by Mt. St. Helens in 1980, several recent investigations, including those of Coombs (1974), Crandell (1973, 1976), Crandell and others (1975), and Crandell and Mullineaux (1976) concluded that essentially all the major Cascade volcanoes have a potential for future activity.

Despite the fact that all major Cascade volcanoes have been active in the last several thousand years, and hence, all must be considered as having a potential for future activity, all are not equally likely to erupt large amounts of volcanic ash in the foreseeable future. Of the volcanoes in the site region, only Mt. St. Helens and Glacier Peak have produced large volumes of volcanic ash during late Quaternary time. Based on past behavior, therefore, Mt. St. Helens and Glacier Peak are the most likely sources of large ash eruption in the future. Although Mt. Hood also could

conceivably produce a major tephra eruption, its potential is considered to be much less that the other two. Thus, the nearest source of a major eruption of volcanic ash would be either Mt. St. Helens or Mt. Hood, both about 137 miles from the WNP 1-2-4 site. Although Mt. Rainier and Mt. Adams are closer to the site, neither are considered to be potential sources of large amounts of ash in the near future (Shannon and Wilson, 1976).

Potential for Ash Reaching Site

The principal factor in the dispersal of ash is the direction and velocity of the high altitude winds. If these are constant during an eruption, the ash is deposited as an elliptical pattern downwind of the volcano. Such conditions prevailed during the May 18, 1980 eruption of Mt. St. Helens when ash began falling at the site between 2 and 3 hours after the eruption.

Available wind data from Salem, Oregon, and Quillayute, Washington (Crandell and Mullineaux, 1976) indicate that the prevailing high-altitude winds in the site region are from the west. The data from Salem (Figure 2.5-23) indicate that in terms of wind patterns between 10,000 and 80,000 feet, the site is directly downwind from Mt. Hood and Mt. St. Helens about 6 to 12 percent of the time and would receive ash up to 30% of the time with various wind vector-altitude combinations.

Potential Thickness of Ash Fall

Estimating a potential maximum ash fall is difficult given the limited number of reliable historical data on volcanic events. Thickness-distance relationships based on observed and estimated ash fall from a number of eruptions are plotted in Figure 2.5-24. From this plot, five inches is a conservative estimate of a potential ash fall for the WNP 1-2-4 site.

Rate and Duration of Ash Fall

Only limited data are available on the rate of volcanic ash fall. Eyewitness accounts suggest a maximum rate of downwind ash fall from the May 18, 1980 eruption of Mt. St. Helens may be 1 in/hr and the same maximum rate has been estimated for the June 1912 eruption of Mt. Katmai. For purposes of evaluating hazards resulting from a hypothetical ash fall, depositional rates of 1 in/hr maximum and of 0.2 in/hr average are assumed. It also is assumed that deposition would continue for less than 24 hours.

Density and Compaction of Ash Fall

Data on the recent Mt. St. Helens eruptions suggest that a dry unit weight of 80 p.c.f. and a compacted (wet or dry) unit weight of 100 p.c.f. are conservative, given the distances from the site to potential ash sources (see Figure 2.5-25). The same data show that compaction could be 20-25 percent.

Sorting and Composition of Ash

The Mt. St. Helens eruptions of 1980 provide the most reliable characterization of a potential ash fall. Figure 2.5-26 shows the observed grain-size distribution for the Mt. St. Helens ash at a number of sites with the Mt. Mazama (6,600 y.b.p.) grain-size distribution superimposed. From these data the following grain-size distribution at the project site is hypothesized; 84 percent less than 75 microns, 50 percent less than 20 microns, 34 percent less than 10 microns, 28 percent less than 7 microns, 20 percent less than 5 microns. The composition of the tephra at distances of approximately 150 miles from the mountain included 15-20 percent crystals, 50-80 percent glass, and 5-25 percent pumice fragments and dust. Seventy percent of the crystals were feldspars.

2.5.1.2.6.2 Subsidence

Karst terrains, cavernous conditions, local tectonic depressions, uplifts, or related features have not been identified in the vicinity of the site.

2.5.1.2.6.3 Landslides

The closest landslide occurrence is three miles or more distant in the White Bluffs adjacent to the Columbia River. Slope stabilities at the site are addressed in 2.5.5.

2.5.1.2.6.4 Regional Warping

Studies by R. E. Brown (1969) and Tillson (1970) suggest that the Pasco Basin is continuing to subside. Brown indicates rates of 1 foot in 5,000 years to 1 foot in 1,000 years. Tillson determined an average rate of 1 mm per year from available leveling data. Although these analyses are not positive indicators of continued basining, they do provide data which precludes regional warping as a problem at the proposed site.

2.5.1.2.6.5 Man's Activities

The extraction and recharge of groundwater in the region and site vicinity is discussed in Sections 2.4.13 and 2.5.1.2.7.6.

The abandoned Rattlesnake Hills gas field is located on the northeast slope of the Rattlesnake Hills, Benton County, Washington, approximately 12 miles from the site. This small accumulation of low pressure methane gas is located on the Rattlesnake Hills anticline. The two producing reservoirs were in vesicular and scoriaceous basalt flows at depths of 700 to 1,260 feet below the ground surface (Glover, 1935).

The gas field was discovered in 1913. Commercial production began in 1929 and the field was abandoned in 1941. The total recorded production is 1,321,145 m.c.f. Additional unrecorded amounts of gas were wasted in the preliminary development of the field (Glover, 1953). The nature of this withdrawal and the distance from the proposed site indicate that it presents no problem to stability of the site.

2.5.1.2.7 Site Geology

The WNP 1-2-4 site lies within the Pasco Basin (Figure 2.5-4), one of several physiogrphic basins within the western Columbia Plateau. For details of the Pasco Basin, see the previous dicussion in section 2.5.1.2.4.

2.5.1.2.7.1 Geologic History

The Geologic history of the WNP 1-2-4 site has been previously discussed on a regional scale in section 2.5.1.1.1 and again on a site province basis in section 2.5.1.2.1.

2.5.1.2.7.2 Physiography

The site (Figures 2.5-1 and 2.5-4) lies in the Pasco Basin, a local physiographic depression within the Columbia Plateau. The Pasco Basin encompasses 1,600 square miles in south central Washington. Within the basin, the ground surface is a gently undulating, semiarid plain, interrupted by low-lying hills and dunes that are dissected by intermittent streams. The basin is transected by the Columbia River which enters the Pasco Basin from the northwest at Sentinel Gap and exits to the southeast at Wallula Gap.

The Columbia River is joined on the west by the Yakima River south of Richland, Washington, and on the east by the Snake River at Pasco, Washington. The northern and southern boundaries of the Pasco Basin are defined by the Saddle Mountains and the Rattlesnake Hills. The easterly end of Manastash-Hanson Creek, Umtanum and Yakima Ridges mark the western boundary of the basin. To the east the basin merges into a vast expanse of dunes, dissected flatlands, and coulees.

The WNP 1-2-4 site lies in the central eastern part of the Pasco Basin (Figure 2.5-4). The most prominant drainage feature in this area is the Columbia River, which flows southeasterly several miles north of the site until about 5 miles northeast of the site where it bends and flows in a southerly direction.

East of the river, opposite the site, steep bluffs known as the White Bluffs rise 400 to 500 feet above the river level. The bluffs were created by erosion of the Ringold Formation by both the Columbia River and glacial floodwaters. To the northeast, where the Columbia River bends southward, two large coulees intersect on the east side of the river. These coulees were formed by the scouring action of glacial floods and are partially filled with glaciofluvial deposits.

The site is located west of the Columbia River in an area composed of a gently undulating, low-profile plain, stretching southwesterly to the Rattlesnake Hills. The topography is largely controlled by Pleistocene glaciofluvial deposits and overlying eolian deposits.

There have been no karst terrains, cavernous conditions, local tectonic depressions or related features identified in the vicinity of the site. However, some regional downwarping may be still going in the Pasco Basin.

Figures 2.5-29 and 2.5-35 show the topography and the geology of the area around the WNP-2 site. The rolling plain topography occurs on glaciofluvial and eolian deposits. At the site, the ground surface varies in elevation from approximately 420 to 470 feet. The average ground surface elevation is about 440 feet with approximately 4 feet of variation from this elevation across the area. A large swarm of active dunes lies to the north of the site area but its migratory direction is northeasterly away from the site.

2.5.1.2.7.3 Stratigraphy and Lithology

The areal geology of the site and vicinity was studied in road cuts, trenches, and outcrops with the aid of aerial photographs. This geology is shown on Figures 2.5-29 and 2.5-35 for the site vicinity and plant site, respectively. The subsurface geology is based on data from 140 boreholes drilled for the site investigations (see Figures 2.5-30, 2.5-31, 2.5-32, 2.5-33, and 2.5-34). Ten of these boreholes provided bedrock information, bottoming in flows of the Yakima Basalt. The logs of these borings are presented in Appendix 2.5-A. Locations of boreholes drilled at the site and in the immediate vicinity are shown on Figures 2.5-61, 2.5-62, and 2.5-63. A trench excavated for this investigation is located on Figure 2.5-62 and the logs of the trench are shown in Appendix 2.5-F. Results of geologic mapping of excavations during construction of the WNP-2 site are presented in Appendix 2.5-H.

The stratigraphy of the Pasco Basin is presented on Figure 2.5-5. The stratigraphic section at the site is illustrated on Figure 2.5-28. The correlation of the geologic units at the site was made on the basis of stratigraphic position, lithology, and other criteria. The basalt flows were core drilled in order to provide a means of utilizing direct lithologic examination (Appendix 2.5-A) and geochemical analysis (Appendix 2.5B). An evaluation of these and other correlation methods is given by Brown and Ledgerwood (1973). The resulting correlations at the site are shown on Figures 2.5-31, 2.5-33, and 2.5-34.

The plant site is underlain by three major rock units: Pre-Columbia River Basalt Group rocks; Columbia River Basalt Group (includes the Ellensburg Formation); and late Cenozoic sediments (includes the Ringold Formation, Palouse Soil, and Hanford formation [Pasco Gravel]). The succession of materials encountered in the subsurface is shown in the stratigraphic section at the plant site, Figure 2.5-28. This section was developed from ten deep geologic borings (see Appendix 2.5A). Five basalt flows and several associated interbedded sediments were identified beneath the site on the basis of these deep borings. From oldest to youngest, the units are: undifferentiated Saddle Mounatins Basalt flows, Selah Member of the Ellensburg Formation, Pomona Basalt, Rattlesnake Ridge Member of the Ellensburg Formation, and the Ward Gap-Elephant Mountain Basalt. These rocks are of late Miocene to early Pliocene age. The Ringold Formation of Pliocene age unconformably overlies the Ward Gap-Elephant Mountain Basalt, which in turn, is mantled locally by glaciofluvial and glaciolacustrine sediments and

by Holocene eolian, alluvial, and colluvial deposits. Lithologic descriptions of these stratigraphic units can be found in section 2.5.1.2.2.

2.5.1.2.7.4 Structural Geology

The WNP 1-2-4 site is located in the Pasco Basin between the west-northwest trending Gable Butte-Gable Mountain anticlines on the north and the Rattlesnake Hills-Wallula alignment anticline on the south. The few mapped faults that occur in the Pasco Basin are associated with folds.

Aerial photographic analysis and ground inspection were made of the area five miles around the site in all directions. No geologic, geomorphic, or topographic indicators of faulting were identified in material younger than the basalt within 5 miles of the site. The closest mapped surface fault is on Gable Mountain about 11 miles northeast of the site (Figure 2.5-17).

A continuity survey was made in the upper Ringold Formation exposed in the White Bluffs east of the site for a distance of approximately 28 miles (Figures 2.5-36 and 2.5-37). Results of this survey and subsequent mapping of the area east of Wooded Island (Figure 2.5-36) indicate that beds within the exposed upper Ringold Formation are essentially horizontal. No faulting was observed in these units.

Figure 2.5-30 illustrates the structural geology of the site vicinity. Data from all available wells and boreholes in the vicinity which penetrated basalt were used to develop the top of basalt contours shown on Figure 2.5-30. The contours represent the contact between the upper Yakima Basalt and Ringold Formation. An erosional unconformity exists between these two units and the contours probably reflect some buried topography on the eroded basalt surface. In the area shown on Figure 2.5-30, the amount of variation from a true structural datum appears to be less than the contour interval of the map.

The lowest known elevation of the top of the basalt in the Cold Creek Syncline (Figure 2.5-30) is 163 feet below sea level (Hanford Well 15-15, Blume and Associates, 1971). The elevation of the top of basalt beneath the site is about 85 feet below sea level. The total relief on the cross-section (Figure 2.5-31) is about 630 feet in a distance of 17-1/2 miles.

Figures 2.5-33 and 2.5-34 present three cross-sections through the site area. The horizontal and vertical scales

of the cross-sections are the same so that there is no exaggeration or distortion of the presentation. The elevations relative to sea level of all of the diagnostic contacts indicate there is very little structural relief in the area of the investigations.

A distinct structural high that is about 150 feet above the surrounding gradient was encountered in BH-139A. Seismic refraction profiles (Appendix 2.5D) also identify this high but show nothing other than a local fold structure. A comparison of the seismic profile data of this structure with Figure 2.5-32 supports the interpretation of a fold occurring at this locality.

The local gradient on the Pomona Basalt in the site area is about 15 to 20 feet vertical per 1,000 feet horizontal to the southwest. Although the gradient is 3 to 5 times steeper on the high at BH-139A, the gradients on the major anticlinal structures are on the order of 100 to 200 feet vertical per 1,000 feet horizontal. Figures 2.5-36 and 2.5-37 indicate that the site area does not lie on or near a major fold in the subsurface of the Pasco Basin.

2.5.1.2.7.5 Engineering Geology

There are no deformational zones, shears, joints, fractures, or folds at this site that would have an influence on structural foundations.

There are no zones of alteration, irregular weathering profiles, or zones of structural weakness at this site that would have an influence on structural foundations.

Because basalt bedrock is at an approximate depth of 525 feet at WNP-2 site, unrelieved residual stresses in bedrock would have no influence on structural foundations and are not a consideration at this site.

The soils beneath the site are derived from predominantly basaltic and silicic rock types that are chemically stable. None of the rocks or soils beneath the WNP-2 site would be unstable because of their mineralogy.

There is no evidence that man might have altered the subgrade mineral condition at the site. The only known commercial value of the mineral substances beneath the site arises from the possible use of the glaciofluvial sand as borrow. These materials abound in the region and have no special foreseeable value that would induce any removals near the plant site.

2.5.1.2.7.6 Groundwater

Groundwater occurs at the site under confined and unconfined conditions. Water existing in an unconfined state in the glaviofluvial deposits and Ringold Formation comprises the regional groundwater system. Locally, water may occur under confined conditions within these sediments. Water in the lower part of the Ringold Formation is confined when it is separated from the overlying unconfined system by relatively impermeable material. Water in the deeper basalt aquifer system is in a confined state.

The water table at the plant site occurs at approximately elevation 380 feet. This elevation is below the foundation of Category I structures. Existing water-level data shows that the elevation of the water table is relatively stable at the plant site. Groundwater conditions of the plant site are discussed in detail in Subsection 2.4.13.

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Washington Public Power Supply System, 1977d, Western Columbia Plateau Margin Studies: WNP 1/4 Preliminary Safety Analysis Report, Amendment 23, Vol. 2A, Subappendix 2R D, Chapter 6.0.

Washington Public Power Supply System, 1977e, Western Columbia Plateau Margin Studies, Wenatchee to Alameda Flat: WNP 1/4 Preliminary Safety Analysis Report, Amendment 23, Vol. 2A, Subappendix 2R D, Chapter 8.0.

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S Main source for earthquake (see Source Code References list). Unless otherwise indicated, the data presented for the earthquake are taken from this source.

3.1 SOURCE CODE REFERENCES USED IN 'S' COLUMN

Time periods of coverage as listed are inclusive

Code	Source
BB	Berg, J. W., and Baker, C. D., 1963, Oregon earthquakes, 1841-1958: Seismological Society of America Bulletin, v. 53, no. 1, p. 95-108.
CA	Canadian (Earth Physics Branch) epicenter data file. Period of coverage: 1860-1978.
CR	Crosson, R. S., 1972, Small earthquakes, structure, and tectonics of the Puget Sound region: Seismological Society of America Bulletin, v. 62, no. 5, p. 1133-1172.
C1	Smith, W. E. T., and Milne, W. G., 1969, Canadian earthquakes - 1964: Seismological Series, Dominion Observatory, Canadian Department of Energy, Mines, and Resources, Ottawa.
C2	Smith, W. E. T., and Milne, W. G., 1970, Canadian earthquakes - 1965: Seismological Series, Dominion Observatory, Canadian Department of Energy, Mines, and Resources, Ottawa.
C3	Stevens, A. E., Milne, W. G., Wetmiller, R. J., and Horner, R. B., 1972, Canadian earthquakes - 1966: Seismological Series of the Earth Physics Branch, No. 62, Canadian Department of Energy, Mines and Resources, Ottawa.
C4	Dominion Observatory (Victoria) data file, 1967-1968.
EH	Coffman, J. L., and von Hake, C. A., (eds.), 1973, Earthquake history of the United States: National Oceanic and Atmospheric Administration, Environmental Data Service, Publication 41-1 (revised edition through 1970), 208 p.
GS	U.S. Geological Survey, Central Washington Data File.

M Milne, W. G., 1956, Seismic activity in Canada west of the 113th meridian, 1841-1951; Canadian Department of Mines and Technical Surveys, Publication of the Dominion Observatory (Ottawa), v. 18, no. 7, p. 119-146.

N, NO National Oceanic and Atmospheric Administration (NOAA), Hypocenter data file. Period of Coverage: 1638 to September, 1980. Environmental Data Service, Boulder, Colorado.

NU Neumann, F., 1967, Crustal structure in the Puget Sound area: Extrait Des Publications Du Bureau Central Seismologique International, Series A, Travaux Sientifiques Fascicule 20, p. 153-167.

R Rasmussen, N., 1967, Washington State earthquakes, 1840-1965: Seismological Society of America Bulletin, v. 57, no. 3, p. 463-476.

RU Rasmussen, N., 1973, Washington State earthquakes, 1966-1973: (unpublished).

SD Racine, D., 1979, A seismicity study of the Pacific Northwest region of the United States, November 1961 - August 1965: Report prepared by Teledyne-Geotech for the U.S. Nuclear Regulatory Commission, Washington, D.C., 43 p.

TA Townley, S. D., and Allen, M. W., 1939, Descriptive catalog of earthquakes of the Pacific Coast of the United States, 1769-1928: Seismological Society of America Bulletin, v. 29, no. 1, p. 1-297.

TS Tobin, D. G., and Sykes, L. R., 1978, Seismicity and tectonics of the northeast Pacific Ocean: Journal of Geophysical Research, v. 73, no. 12, p. 3821-38.45.

UE United States Earthquakes; Annual Publication of the U.S. Department of Commerce, 1928-present: by U.S. Coast and Geodetic Survey, Seismological Society of America, NOAA or Earthquake Data Service.

UN Underwood, R., 1972, Studies of Victorian seismicity: Royal Society of Victoria Proceedings, v. 2, p. 27-47.

UW University of Washington. Periods of Coverage. Western Washington (west of longitude 122°W),

18 June 1970-1974, 1978; Eastern Washington (east of longitude 122°W); 25 March 1969-1979, 18 June-December, 1980.

W Woodward-Clyde Consulants, 1978, 1872 earthquake studies, WPPSS nuclear project Nos. 1 and 4: micro-earthquake study; Report prepared for the Washington Public Power Supply System, Richland, Washington, 32 p.

WG Weston Geophysical Research, Inc. 1973, Hanford, Washington, Preliminary Safety Analysis Report for U.S. Atomic Safety Commission. Weston Geophysical Research, Inc., British Columbia, May-October, 1978.

V Vance, D. J., 1971, Relocation of some seismic events in the Puget Sound area, 1951-1968: M.S. thesis, University of Washington, Seattle, Washington.

4.1 MAGNITUDE CODES USED IN "SM" COLUMN

Code	Explanation
MB	Body wave magnitude
MC	University of Washington coda-length magnitude
ML	Local Richter magnitude
MN	Nuttli magnitude
MS	Surface wave magnitude
N1	Magnitude reported by NOAA. See "Location and Comments" column for identification of magnitude source and scale.

5.1 NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION (NOAA) HYPOCENTER DATA FILE FORMAT EXPLANATION

5.1.1 REPORTING OF FRACTIONAL EARTHQUAKE MAGNITUDES

Many early magnitudes in the NOAA data file were originally reported as fractions and have been converted to decimal notations. As is the case with coordinate locations, these decimal notations do not imply accuracy to the nearest hundredth of a unit. For example,

Magnitude originally reported as	Appears as
6 - 6 1/4	6.13
6 1/4	6.25
6 1/4 - 6 1/2	6.38
6 1/2	6.50
6 1/6 - 6 3/4	6.63
6 3/4	6.75
6 3/4 - 7	6.88

For any other range, the median value is listed.

5.1.2 EXPLANATION OF NOAA CODES USED IN "Q" COLUMN

Code	Explanation
*	Assigned to solutions for which poor azimuth, depth control, and other factors contribute to a less reliable solution.
A	Parameters of explosion supplied by U.S. Atomic Energy Commission (AEC).
B	Parameters of epicenter supplied by University of California, Berkeley, California.
D	Authority for time and coordinates: Department of Energy, Mines, and Resources, Canada.
E	Some or all parameters of explosion (controlled or accidental) supplied by any group or individual other than AEC.
G	Parameters of epicenter supplied by the U.S. Geological Survey for any area other than Island of Hawaii.
M	Hypocenter based on macroseismic information.
S	An NEIS solution based on use of dense local networks, a local crustal model, or other methods not routinely applied by NEIS (USGS).
W	Parameters of epicenter supplied by University of Washington, Seattle, Washington.
Z	Noninstrumental.

5.1.3 EXPLANATION OF NOAA CODES USED IN "LOCATION AND COMMENTS" COLUMN

Code	Explanation
A	NOAA depth control designation indicating hypocenter depth assigned for shallow focus (not computed).
BCIS	Bureau Central International De Seismologie.
BRK	University of California, Berkeley, California, Seismograph Station (Haviland).
CGS, CGS-B	U.S. Coast and Geodetic Survey: Number following CGS indicates bi-weekly preliminary determination of epicenter sequence number.
CGSPDE	U.S. Coast and Geodetic Survey: Preliminary determination of epicenter.
D	NOAA depth control designation indicating depth based on two or more reported pP's identified as such.
ERL, ERL#	Environmental Research Laboratories: Number following ERL indicates bi-weekly preliminary determination of epicenter sequence number.
G	NOAA depth control designation indicating depth restrained by geophysicist.
GOL	Colorado School of Mines Seismograph Station, Golden, Colorado.
GUTE	Gutenberg and Richter (1954).
LG	Variation of Nuttli magnitude using LG phase.
N	NOAA depth control designation indicating normal depth (33 km) when data are not sufficient to calculate shallow focal depth.
NOS, NOS#	National Ocean Survey: Number following NOS indicates bi-weekly preliminary determination of epicenter sequence number.
NU	Nuttli magnitude.
OSU	Oregon State University.
PAL	Lamont-Doherty Geological Observatory Seismograph Station, Palisades, New York.

PAS, PA	California Institute of Technology, Pasadena, California, Seismograph Station.
PDE	U.S. Coast and Geodetic Survey: Preliminary determination of epicenter.
USE	United States Earthquakes, Annual Publication of the U.S. Department of Commerce, 1928-present, by the C&GS, BSSA, NOAA, or EDS.

5.1.4 ISOSEISMAL MAP PUBLISHER CODES

Code	Explanation
USE	United States Earthquakes
EQN	Earthquake Notes
PDE	Preliminary Determination of Epicenters

6.1 UNITED STATES GEOLOGICAL SURVEY
CENTRAL WASHINGTON DATA FILE CODES EXPLANATION

6.1.1 HYPOCENTER SOLUTION QUALITY USED IN "Q" COLUMN

This measure is intended to indicate the general reliability of a hypocentral solution.

Quality	Epicenter	Focal Depth
A	Excellent	Good
B	Good	Fair
C	Fair	Poor
D	Poor	Poor

The quality is based on both the nature of the station distribution with respect to the earthquake and the statistical measure of the solution.

6.1.2 EXPLANATION OF ABBREVIATIONS USED IN "LOCATION AND COMMENTS" COLUMN

Abbreviation	Explanation
DMIN	Epicentral distance in kilometers to the nearest station; rounded to the nearest integer.
GAP	Largest azimuthal separation in degrees between stations.

HSE Horizontal standard error of the epicenter in Kilometers: HSE = SQRT [(SDX**2) + (SDY**2)], where SDX and SDY are the standard errors in longitude nd latitude, respectively, of the epicenter. When NSTN is less than or equal to four, HSE cannot be computed and is left blank.

NSTN Number of stations used in locating the earthquake.

R (In 'SM' column) indicates the Richter magnitude calculated from Wood-Anderson seismograph records.

RMS Root-mean-square error of the time residuals: RMS - SQRT [(R(I)**2, I=1,NSTN) / NSTN]; where R (I) is the observed seismic-wave arrival time minus the computed time at the I-th station.

ZSE Standard error of the depth in kilometers.

* (At end of statistical data line) indicates earthquake was also reported in Bulletin of the Seismograph Stations of the University of California, Berkeley.

7.1 CANADIAN (EARTH PHYSICS BRANCH) EPICENTER DATA EXPLANATION

The Canadian epicenter data denoted by the source code CA comes from the Earth Physics Branch, Division of Seismology and Geothermal Studies of the Department of Energy, Mines and Resources, Ottawa, Canada.

7.1.1 ORIGINAL DATA SOURCES AND CODES

The following are the codes used in the notation ORIGINAL DATA

SOURCE=xxx in the "Location and Comments" column.

<u>Code</u> <u>Explanation</u>

EPB Earth Physics Branch of Dept. of Energy, Mines and Resources, Canada. The great bulk of the EPB data has been published in the Seismological Series of the Earth Physics Branch by the Seismological Service of Canada, Dept. of Energy, Mines and Resources, in the Seismological Series of the Dominion Observatories, Dept. of Mines and Technical surveys, or in the Publications of the Dominion Observatory, Dept. of

Mines and Technical Surveys, by various authors. The above are all one series, characterized by orange covers and a history of name changes.

PDE Preliminary Determination of Epicenters, available through National Earthquake Information Service, U.S.A.

UBC University British Columbia, Canada

ISC International Seismological Center

The data represented here, as provided by EPB, attempts to be faithful to the published material. The source "EPB" is given for all events prior to 1968, despite the fact that not all these epicenters or their parameters can be found in Canadian publications. Some are from ISS (International Seismological Summary), USCGS (United States Coast and Geodetic Survey), Gutenberg an Richter, "Seismicity of the Earth and Associated Phenomena" (Princeton University Press, 1954), and from other references.

7.1.2 INTENSITY MAGNITUDE CONVERSION

In the data supplied by EPB, all events before 1899 and some thereafter are assigned magnitudes calculated from their maximum intensities according to the formula

$$M = (2/3)\ I + 1$$

For the period before 1899, in order to depict the parameters of events as accurately as possible, magnitudes are reconverted back to intensities in the EQDB catalog according to the formula

$$I = (3/2)\ (M - 1)$$

However, since there is no way to determine whether a given event in 1899 or later was assigned a calculated magnitude by EPB, no reconversion is done for 1899 and later; hence some events in this period may have magnitudes assigned to them despite the fact that there was no original report of magnitude. Such magnitudes are always reported as local magnitudes.

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
1	3 DEC 1841	LT	45.600N	122.700W	W	V					R	VANCOUVER, WASH.
2	2 APR 1859	10:30:00.0	47.045N	122.890W	W	V					R	OLYMPIA
3	26 AUG 1865	05:00:00.0	48.500N	123.500W		VI				Z	NO	REPORTED FELT INFORMATION ORIGINAL DATA SOURCE = EQH NON-INSTRUMENTAL
4	24 NOV 1866	18:10:00.0	45.595N	121.173W	W	IV					R	THE DALLES, ORE.
5	14 DEC 1872	21:40:30LT	49.167N	121.000W		IX					W	FELT AS FAR SOUTH AS EUGENE, OREGON AND AS FAR NORTH AS SODA CREEK, B.C. IN THE CARIBOO. MANY AFTERSHOCKS FELT OVER WIDE AREA ON DEC 14-16 AND WITHIN THE FOLLOWING TWO WEEKS. AFTERSHOCKS REPORTED FOR MORE THAN SIX WEEKS FOLLOWING MAIN SHOCK. FULL DISCUSSION IN WNP-1/4 PSAR, AMENDMENT 23, APPENDICES 2R, A AND B.
6	19 OCT 1873	22:00:00.0	47.597N	122.330W	W	IV					R	SEATTLE
7	22 NOV 1873	21:00:00.0	42.000N	124.000W			5.60ML				CA	ORIGINAL DATA SOURCE = EPB
8	17 DEC 1873	LT	47.045N	122.890W	W	IV					R	OLYMPIA, DATE QUESTIONABLE
9	12 OCT 1877	09: LT	45.700N	121.900W	W1	VII					BB	CASCADES, OREG;(ASSUME TO BE CASCADE MTS, BB MAP)
10	12 OCT 1877	21:53:00.0	45.550N	122.600W	W	III					BB	PORTLAND, OREGON AREA.
11	30 NOV 1877	04: LT	45.550N	122.600W	W1	III					BB	PORTLAND, OREG
12	18 MAR 1878	14:30:00.0	47.237N	122.433W	W	III					R	TACOMA
13	1879	LT	45.535N	122.620W	W	IV					R	PORTLAND, ORE. MONTH AND DAY NOT SPECIFIED
14	10 DEC 1880	13:00:00.0	47.650N	122.525W	W	IV					R	BAINBRIDGE IS.
15	13 DEC 1880	04:40:00.0	47.500N	122.500W	W	VII					R	PUGET SOUND
16	15 DEC 1880	02:00:00.0	47.650N	122.525W	W	III					R	BAINBRIDGE IS.
17	21 DEC 1880	07:16:00.0	47.650N	122.525W	W	IV					R	BAINBRIDGE IS.
18	30 DEC 1880	07:25:00.0	47.650N	122.525W	W	III					R	BAINBRIDGE IS.
19	17 JAN 1881	07:00:00.0	47.650N	122.525W	W	III					R	BAINBRIDGE IS.
20	31 JAN 1881	05:45:00.0	47.650N	122.525W	W	III					R	BAINBRIDGE IS.
21	15 MAR 1881	06:30:00.0	47.650N	122.525W	W	III					R	BAINBRIDGE IS.

21 15 MAR 1881 06:30:00.0 47.650N 122.525W W III R BAINBRIDGE IS.

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG	SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
22	1 MAY 1882	00:25:LT	45.550N	122.600W	W1	III						BB	PORTLAND, OREG
23	JUN 1883	LT	47.237N	122.433W	W	III						R	TACOMA, DATE QUESTIONABLE
24	4 JAN 1884	04:40:00.0	45.535N	122.620W	W	IV						R	PORTLAND ORE.
25	22 SEP 1884	06:00:00.0	47.237N	122.433W	W	III						R	TACOMA, SEVERAL LIGHT SHOCKS WERE FELT
26	27 JUN 1885	13:26:00.0	47.045N	122.890W	W	IV						R	OLYMPIA
27	9 OCT 1885	16:00:00.0	47.000N	123.000W		V					Z		NO REPORTED FELT INFORMATION ORIGINAL DATA SOURCE = EQH NON-INSTRUMENTAL
28	10 OCT 1885	09:00:00.0	45.550N	122.600W	W1	III						BB	PORTLAND OREG; THREE VERY LIGHT SHOCKS INTENSITY REPORTED AS II-III INTENSITY SOURCE-BB
29	9 DEC 1885	06:40:00.0	47.500N	122.500W		V					Z		NO REPORTED FELT INFORMATION ORIGINAL DATA SOURCE = EQH NON-INSTRUMENTAL
30	19 DEC 1885	08:30:00.0	48.380N	124.750W	W	III						R	TATOOSH IS.
31	8 MAR 1890	LT	47.045N	122.890W	W	III						R	OLYMPIA, YEAR QUESTIONABLE
32	16 MAR 1890	04:00:00.0	47.218N	120.990W	W	III						R	ROSLYN, YEAR QUESTIONABLE
33	29 MAR 1890	22:30:00.0	47.218N	120.990W	W	III						R	ROSLYN, YEAR QUESTIONABLE
34	2 SEP 1891	10:30:LT	47.100N	118.400W	W1	IV						WG	RITZVILLE,WASH.
35	17 SEP 1891	04:30:00.0	44.940N	121.033W	W	IV						BB	SALEM, OREG
36	19 SEP 1891	09: LT	47.597N	122.330W	W	V						WG	SEATTLE, WASHINGTON.
37	22 SEP 1891	11:40:00.0	48.000N	123.500W		V					Z		NO REPORTED FELT INFORMATION ORIGINAL DATA SOURCE = EQH NON-INSTRUMENTAL
38	29 NOV 1891	23:21:00.0	48.115N	123.443W	W	VII						R	PORT ANGELES, FELT OVER 4,000 SQ. MI.
39	4 FEB 1892	04:30:00.0	45.535N	122.620W		VI						R	PORTLAND, ORE; FELT OVER 10,000 SQ MI AREA.
40	29 FEB 1892	10:45:00.0	45.595N	121.173W	W	IV						R	THE DALLES, ORE.
41	5 MAR 1892	LT	46.600N	120.500W	W	VI						WG	NORTH YAKIMA, WASH. TIME REPORTED AS LT
42	17 APR 1892	22:50:00.0	47.000N	123.000W		VI					Z		NO REPORTED FELT INFORMATION ORIGINAL DATA SOURCE = EQH

42	17 APR 1892	22:50:00.0	47.000N	123.000W		VI					Z	NO	REPORTED FELT INFORMATION ORIGINAL DATA SOURCE = EQH

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG	SM	H (KM)	DIS (KM)	Q	S	L O C A T I O N A N D C O M M E N T S
													NON-INSTRUMENTAL
43	5 MAR 1893	LT	45.900N	119.333W	W	VI						WG	UMATILLA, ORE. TIME REPORTED AS LT
44	14 AUG 1893	13:07:00.0	46.292N	122.367W	W	IV						R	11 MILES N.W. OF MT. ST. HELENS
45	15 APR 1894	LT	46.998N	120.540W	W	III						WG	ELLENSBURG, WASH. TIME REPORTED AS LT
46	25 FEB 1895	12:47:00.0	46.500N	122.400W		V					Z	NO	REPORTED FELT INFORMATION ORIGINAL DATA SOURCE = EQH NON-INSTRUMENTAL
47	16 APR 1895	08:02:00.0	48.000N	123.000W		V					Z	NO	REPORTED FELT INFORMATION ORIGINAL DATA SOURCE = EQH NON-INSTRUMENTAL
48	4 JAN 1896	06:15:00.0	48.500N	122.800W		VI					Z	NO	REPORTED DAMAGE ORIGINAL DATA SOURCE = EQH NON-INSTRUMENTAL
49	7 FEB 1896	05:55:00.0	48.300N	124.300W		VI					Z	NO	REPORTED FELT INFORMATION ORIGINAL DATA SOURCE = EQH NON-INSTRUMENTAL
50	2 APR 1896	11:17:00.0	45.300N	123.300W		VI					Z	NO	REPORTED FELT INFORMATION ORIGINAL DATA SOURCE = EQH NON-INSTRUMENTAL
51	26 JAN 1897	22:45:00.0	44.641N	124.050W	W	IV						BB	NEWPORT, OREG
52	27 SEP 1897	09:30:00.0	47.045N	122.890W	W	IV		WG				R	OLYMPIA, FELT
53	7 DEC 1897	04:30:00.0	45.520N	123.108W	W	III						BB	FORREST GROVE, OREG
54	15 DEC 1897	LT	47.800N	120.000W		V		WG				R	SEVERE SHOCK, LAKESIDE, WA.
55	22 FEB 1898	02:25:00.0	45.535N	122.620W	W	IV						R	PORTLAND, ORE.
56	22 FEB 1898	09:15:00.0	45.535N	122.620W	W	III						R	PORTLAND, ORE.
57	15 JUN 1902	04:00:00.0	44.641N	124.050W	W	IV						BB	NEWPORT, OREG
58	15 JUN 1902	09:00:00.0	44.641N	124.050W	W	IV						BB	NEWPORT, OREG
59	18 DEC 1902	15:00:00.0	44.648N	119.143W	W	III						BB	FOX VALLEY, OREG;2 DISTINCT SHOCKS
60	14 MAR 1903	02:15:00.0	47.700N	122.200W		V					Z	NO	REPORTED FELT INFORMATION ORIGINAL DATA SOURCE = EQH NON-INSTRUMENTAL

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CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG	SH	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
61	11 SEP 1903	15:44:LT	47.500N	122.450W	W	IV						WG	SEATTLE-TACOMA, WASH.
62	9 DEC 1903	LT	47.217N	122.000W	W	IV						WG	ENUMCLAW, WASH. TIME REPORTED AS LT
63	17 MAR 1904	04:20:00.0	48.500N	123.300W		V						R	FELT OVER 20,000 SQ. MI.
64	16 JUN 1904	18:25:00.0	45.535N	122.620W	W	IV						R	PORTLAND, ORE.
65	16 JUN 1904	19:40:00.0	45.535N	122.620W	W	IV						R	PORTLAND, ORE.
66	16 JUN 1904	22:00:00.0	45.535N	122.620W	W	IV						R	PORTLAND, ORE. TWO OTHER SHOCKS WERE FELT ON JUNE 16.
67	18 OCT 1905	23: LT	47.800N	120.000W	W	V						WG	CHELAN, WASH. SEVERAL SHOCKS.
68	11 NOV 1905	21:26:00.0	42.900N	114.500W		VII					Z	NO	REPORTED DAMAGE ORIGINAL DATA SOURCE = EQH NON-INSTRUMENTAL
69	2 JAN 1906	LT	48.700N	117.800W	W1	VI						WG	STEVENS CO.,WASH. 7,000 SQ MI AREA.
70	19 APR 1906	09:30:00.0	42.700N	120.600W		V	4.30ML				Z	NO	REPORTED FELT INFORMATION ORIGINAL DATA SOURCE = EQH MAGNITUDE AUTHORITY = EPB NON-INSTRUMENTAL
71	23 APR 1906	19:00:00.0	42.400N	123.400W			4.30ML					CA	ORIGINAL DATA SOURCE = EPB
72	1 JUN 1906	12:55:00.0	47.597N	122.330W	W	V						R	SEATTLE
73	1 SEP 1906	LT	44.779N	117.833W	W	III						BD	BAKER, OREG TIME REPORTED AS LT
74	2 NOV 1906	01:49:00.0	48.500N	117.900W		V					Z	NO	REPORTED FELT INFORMATION ORIGINAL DATA SOURCE = EQH NON-INSTRUMENTAL
75	18 FEB 1907	12:20:LT	47.842N	120.023W	W	V						WG	CHELAN, WASH.
76	27 MAY 1907	12:00:00.0	45.535N	122.620W	W	III						R	PORTLAND, ORE.
77	28 JUL 1907	10:20:00.0	48.450N	123.350W	W	V						R	PORT TOWNSEND-VICTORIA, B.C.
78	11 JAN 1909	23:49:00.0	48.700N	122.800W		VII	6.00					CA	REPORTED DAMAGE ORIGINAL DATA SOURCE = EQH NON-INSTRUMENTAL
79	21 JAN 1909	05: LT	47.800N	120.000W	W	IV						WG	CHELAN, WASH.
80	24 MAY 1909	22: LT	47.730N	120.360W	W	V						WG	CHELAN-LEAVENWORTH,WASH. FELT AT 10:00 OR 10:30 PM LT.

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
81	31 DEC 1909	00:23:00.0	45.535N	122.620W	W	IV					R	PORTLAND, ORE.
82	15 FEB 1910	24:00:00.0	45.550N	122.600W	W	IV					BB	PORTLAND, OREG
83	5 AUG 1910	01:31:36.0	42.000N	127.000W			6.80N'				NO	ORIGINAL DATA SOURCE = GUT MAGNITUDE(FRACTIONAL NOTATION,AVE)=6.80, AUTHORITY-PAS
84	5 JUL 1911	08:00:00.0	46.998N	120.540W	W	V					R	ELLENSBURG
85	29 SEP 1911	02:39:00.0	48.800N	122.700W		VI				Z	NO	REPORTED FELT INFORMATION ORIGINAL DATA SOURCE = EQH NON-INSTRUMENTAL
86	29 JUL 1913	16:15:00.0	47.000N	122.000W		V				Z	NO	REPORTED FELT INFORMATION ORIGINAL DATA SOURCE = EQH NON-INSTRUMENTAL
87	14 OCT 1913	23:00:00.0	45.700N	117.100W		V				Z	NO	REPORTED FELT INFORMATION ORIGINAL DATA SOURCE = EQH NON-INSTRUMENTAL
88	25 DEC 1913	10:45:00.0	47.700N	122.500W		V					R	FELT OVER 8,000 SQ. MI.
89	22 MAR 1914	14:30:00.0	45.535N	122.620W	W	IV					R	PORTLAND, ORE.
90	5 SEP 1914	09:35:00.0	47.000N	123.000W		V				Z	NO	REPORTED FELT INFORMATION ORIGINAL DATA SOURCE = EQH NON-INSTRUMENTAL
91	5 SEP 1914	10:00:00.0	45.550N	122.600W	W	III					BB	PORTLAND, OREG
92	18 JAN 1915	00:00:00.0	45.500N	118.000W	R2	III					R	SUMMERVILLE, ORE.
93	26 JAN 1915	00:55:00.0	46.750N	121.810W	W	IV					R	LONGMIRE
94	11 FEB 1915	03:07:00.0	47.500N	124.000W	W	III					R	QUEETS RIVER
95	1 MAR 1915	18:00:00.0	47.830N	120.020W	W	III					R	LAKESIDE
96	1 MAR 1915	18:03:00.0	47.830N	120.020W	W	III					R	LAKESIDE
97	5 MAR 1915	05:10:00.0	47.830N	120.020W	W	IV					R	LAKESIDE
98	5 MAR 1915	05:30:00.0	47.830N	120.020W	W	IV					R	LAKESIDE
99	18 MAY 1915	LT	45.535N	122.620W	W	V					WG	PORTLAND, ORE. TIME REPORTED AS LT
100	18 JUL 1915	20:54:00.0	47.830N	120.020W	W	IV					R	LAKESIDE
101	18 AUG 1915	14:05:00.0	48.500N	121.400W		V					R	FELT OVER 30,000 SQ. MI.

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
102	18 NOV 1915	23:42:00.0	45.862N	122.671W	W	V					R	LA CENTER
103	10 DEC 1915	20:45:00.0	47.672N	117.405W	W	IV					R	SPOKANE
104	2 JAN 1916	00:52:00.0	47.300N	122.300W		V				Z		NO REPORTED FELT INFORMATION ORIGINAL DATA SOURCE = EQH NON-INSTRUMENTAL
105	4 JAN 1916	18:40:00.0	44.641N	124.050W	W	IV					BB	NEWPORT, OREG; 2 SHOCKS INTENSITY SOURCE=BB
106	22 FEB 1916	11:45:00.0	48.800N	122.600W		V				Z		NO REPORTED FELT INFORMATION ORIGINAL DATA SOURCE = EQH NON-INSTRUMENTAL
107	20 APR 1916	04:30:00.0	44.000N	114.800W			4.30ML				CA	ORIGINAL DATA SOURCE = EPB
108	6 MAY 1916	06:36:00.0	43.800N	116.000W			4.30ML				CA	ORIGINAL DATA SOURCE = EPB
109	13 MAY 1916	02:30:00.0	43.700N	116.200W		VII				Z		NO REPORTED DAMAGE ORIGINAL DATA SOURCE = EQH NON-INSTRUMENTAL
110	26 MAY 1916	06:36:00.0	43.800N	116.000W		V				Z		NO REPORTED FELT INFORMATION ORIGINAL DATA SOURCE = EQH NON-INSTRUMENTAL POSSIBLY SAME AS MAY 6 EARTHQUAKE
111	28 MAY 1916	LT	44.779N	117.833W	W	III					BB	NEAR BAKER, OREG TIME REPORTED AS LT
112	10 SEP 1916	02:57:00.0	43.500N	114.300W		V				Z		NO REPORTED FELT INFORMATION ORIGINAL DATA SOURCE = EQH NON-INSTRUMENTAL
113	28 MAR 1917	17:05:00.0	46.800N	122.000W		V					R	NEAR MT RAINIER.
114	20 APR 1917	04:30:00.0	44.000N	114.800W		V				Z		NO REPORTED FELT INFORMATION ORIGINAL DATA SOURCE = EQH NON-INSTRUMENTAL
115	9 JUN 1917	14:30:00.0	46.800N	122.000W		V					R	NEAR MT RAINIER.
116	1 JUL 1917	13:20:50.0	50.000N	128.000W			6.40ML				CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 6.40 ML
117	12 NOV 1917	10:47:00.0	46.800N	121.800W		VI				Z		NO REPORTED FELT INFORMATION ORIGINAL DATA SOURCE = EQH NON-INSTRUMENTAL
118	14 NOV 1917	00:57:00.0	46.800N	121.800W		V					R	NEAR MT RAINIER.

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG	SH	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
119	23 DEC 1917	15:48:00.0	50.000N	128.000W			6.50ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 6.50 ML
120	4 FEB 1918	20:37:43.2	52.280N	118.370W			6.00ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 5.00 ML
121	13 FEB 1918	02:00:00.0	45.535N	122.620W	W	III						R	PORTLAND, ORE.
122	21 FEB 1918	LT	46.867N	121.333W	W	IV						WG	BUMPING LAKE, WASH. TIME LISTED AS 7-8 P.M. TIME REPORTED AS LT
123	28 FEB 1918	23:15:00.0	46.500N	120.500W		V						R	NEAR YAKIMA, WASH.
124	12 MAR 1918	03:26:00.0	47.600N	117.000W		V					Z	NO	REPORTED FELT INFORMATION ORIGINAL DATA SOURCE = EQH NON-INSTRUMENTAL
125	18 APR 1918	21:13:00.0	47.600N	117.400W	R2	IV						R	WHITE BLUFFS PRAIRIE
126	7 MAY 1918	21:15:00.0	48.400N	121.550W	W	IV						R	NORTH FORK, SAUK RIVER
127	21 JUN 1918	06:47:00.0	46.500N	121.700W		V						R	NEAR PACKWOOD, WASH.
128	1 NOV 1918	17:20:00.0	46.700N	119.500W		VI					Z	NO	REPORTED FELT INFORMATION INTENSITY DATA SUGGEST LOCATION SHOULD BE NORTH OF LISTED EPICENTER NEAR CORFU, WASH. SEE WPPSS PSAR WNP 1/4 AMEND. 9, SECTION 2.5.2.1
129	6 DEC 1918	08:41:05.8	49.620N	125.920W		V	7.00N					NO	REPORTED FELT INFORMATION ORIGINAL DATA SOURCE = GUT MAGNITUDE(FRACTIONAL NOTATION,AVE)=7.00, AUTHORITY-PAS
130	1 JUL 1919	21:49:36.0	50.000N	128.000W			5.50ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 5.50 ML
131	10 JUL 1919	02:22:10.0	50.000N	128.000W			5.00ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 5.00 ML
132	10 OCT 1919	01:07:16.5	48.630N	127.150W			5.50ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 5.50 ML
133	26 DEC 1919	06:00:00.0	45.433N	122.250W	W	IV						BB	BULLRUN, OREG; OTHER SHOCKS THROUGHOUT THE NIGHT INTENSITY REPORTED AS IV+ INTENSITY SOURCE=BB
134	24 JAN 1920	07:09:00.0	49.000N	122.700W		VII					Z	NO	REPORTED DAMAGE ORIGINAL DATA SOURCE = EQH NON-INSTRUMENTAL
135	2 MAR 1920	04:20:00.0	46.518N	122.158W	W	IV						R	GLENOMA, WASH.

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CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG	SH	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
136	14 APR 1920	23:45:00.0	42.900N	122.100W		V					Z		NO REPORTED FELT INFORMATION ORIGINAL DATA SOURCE = EQH NON-INSTRUMENTAL
137	7 OCT 1920	02: LT	47.633N	120.067W	W	V						WG	WATERVILLE, WASH.
138	9 NOV 1920	20:20:00.0	45.550N	122.600W	W	III						BB	PORTLAND, OREG; FROM THE REPORT IN THE OREGONIAN, HOWEVER, IT WOULD APPEAR TO BE 00:20 LT
139	28 NOV 1920	11:30:00.0	45.700N	121.500W	W	IV						R	HOOD RIVER, ORE.
140	15 DEC 1920	18:50:00.0	44.400N	122.400W	W1	III						BB	CASCADIA, OREG (BB MAP) INTENSITY SOURCE=BB
141	25 FEB 1921	20:00:00.0	44.400N	122.400W		V					Z		NO REPORTED FELT INFORMATION ORIGINAL DATA SOURCE = EQH NON-INSTRUMENTAL
142	4 MAR 1921	20:00:00.0	45.550N	122.600W	W	III						BB	PORTLAND, OREG; SEVERAL SHOCKS INTENSITY REPORTED AS II-III INTENSITY SOURCE=BB
143	14 SEP 1921	11:00:00.0	46.100N	118.250W	W	VI						R	DIXIE-WALLA WALLA, WASH. OTHER SHOCKS AT 13:00, 13:05, 13:20.
144	16 SEP 1921	15: LT	47.900N	114.200W		IV						UE	FELT AT BIG ARM, MONT.
145	22 SEP 1921	19:20:00.0	45.550N	122.600W	W	IV						BB	PORTLAND, OREG; INTENSITY COULD BE III. INTENSITY SOURCE=BB
146	31 JAN 1922	14:30:00.0	48.717N	119.437W	W	III						R	TONASKET, FELT
147	27 MAR 1922	06:15:00.0	45.535N	122.620W	W	IV						R	PORTLAND, ORE.
148	15 MAY 1922	17:30:00.0	45.550N	122.600W	W	IV						BB	PORTLAND, OREG
149	1 JUN 1922	23:30:00.0	47.672N	117.405W	W	IV						R	SPOKANE
150	5 JUL 1922	18:05:00.0	45.880N	121.970W	W	IV						R	STADLER
151	12 DEC 1922	LT	45.669N	118.790W	W	III						BB	PENDLETON DISTRICT, OREG (ASSUMED AS PENDLETON) TIME REPORTED AS LT
152	11 JAN 1923	04:30:00.0	42.000N	120.500W		V					Z		NO REPORTED DAMAGE ORIGINAL DATA SOURCE = EQH NON-INSTRUMENTAL
153	12 FEB 1923	18:30:00.0	49.000N	122.700W		V					Z		NO REPORTED DAMAGE ORIGINAL DATA SOURCE = EQH NON-INSTRUMENTAL

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG	SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
154	12 MAR 1923	18:15:00.0	48.502N	122.610W	W	IV						R	ANACORTES
155	2 MAY 1923	16:24:30.0	50.000N	128.000W			5.00ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 5.00 ML
156	14 JUL 1923	23:30:00.0	48.100N	121.800W	W	IV						R	SILVERTON-ARLINGTON
157	15 JUL 1923	00:10:00.0	48.100N	121.800W	W	IV						R	SILVERTON-ARLINGTON, WASH. ANOTHER SHOCK AT 01:45.
158	6 JAN 1924	13:09:00.0	46.070N	118.328W	W	IV						R	WALLA WALLA
159	6 JAN 1924	23:10:00.0	45.800N	118.300W	W1	V						BB	MILTON AND WESTON, OREG (BB MAP)
160	24 FEB 1924	05:45:10.0	44.000N	127.000W			5.75N'					NO	ORIGINAL DATA SOURCE = GUT MAGNITUDE(FRACTIONAL NOTATION,AVE)=5.75, AUTHORITY-PAS
161	25 APR 1924	08:03:00.0	47.597N	122.330W	W	III						R	SEATTLE
162	27 MAY 1924	00:19:00.0	46.070N	118.328W	W	IV						R	WALLA WALLA, 4 SHOCKS FELT
163	19 SEP 1924	17:30:00.0	45.730N	122.548W	W	IV						R	BRUSH PRAIRIE
164	1 AUG 1925	20:05:00.0	48.115N	123.443W	W	IV						R	PORT ANGELES, PROBABLY IN STRAIT OF JUAN DE FUCA.
165	15 AUG 1925	00:08:00.0	47.597N	122.330W	W	III						R	SEATTLE
166	26 NOV 1925	21:40:00.0	48.500N	123.250W	W	III						R	HARO STRAIT
167	28 NOV 1925	01:25:00.0	47.500N	116.000W			4.30ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 4.30 ML
168	11 APR 1926	03:28:00.0	46.070N	118.328W	W	III						R	WALLA WALLA
169	23 APR 1926	13:56:00.0	46.070N	118.328W	W	IV						R	WALLA WALLA
170	5 JUN 1926	19:50:24.0	43.000N	127.500W			6.00N'					NO	ORIGINAL DATA SOURCE = GUT MAGNITUDE(FRACTIONAL NOTATION,AVE)=6.00, AUTHORITY-PAS
171	17 SEP 1926	22:14:40.0	50.000N	123.000W			5.50ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 5.50 ML
172	22 SEP 1926	21:09:50.5	50.220N	121.890W			5.00ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 5.00 ML
173	17 OCT 1926	02:45:00.0	45.730N	121.483W	W	V						R	WHITE SALMON
174	27 NOV 1926	18:25:LT	47.500N	116.000W		V						EH	NEAR RATHDRUM, IDAHO; FELT AREA 2,000 SQ MI; TWO DISTINCT SHOCKS
175	4 DEC 1926	13:55:00.0	48.500N	123.000W	W	V	4.30ML					R	ANACORTES-FRIDAY HARBOR

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG	SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
176	30 DEC 1926	17:57:00.0	47.700N	120.200W	W	VI						WG	CHELAN-E. CENTRAL WASH. FELT OVER 15,000 SQ. MI.
177	31 DEC 1926	LT	47.430N	120.340W	W	III						WG	WENATCHEE,WA. POSSIBLE AFTERSHOCK.
178	1 JAN 1927	LT	47.842N	120.023W	W	III						WG	LAKE CHELAN,WA. POSSIBLE AFTERSHOCK.
179	3 JAN 1927	04:58:00.0	47.593N	120.658W	W	VI						R	LEAVENWORTH
180	28 MAR 1927	07:56:00.0	46.100N	124.100W		IV						R	NORTH HEAD, PROBABLY OFF SOUTHERN WASHINGTON COAST.
181	9 APR 1927	05:00:00.0	44.800N	117.200W	EH	V						BB	RICHLAND AREA, OREG
182	9 APR 1927	07:00:00.0	44.800N	117.200W	W1	IV						BB	RICHLAND AREA, OREG (BB MAP) INTENSITY REPORTED AS III-IV
183	9 APR 1927	09:30:00.0	44.800N	117.200W	W1	IV						BB	RICHLAND AREA, OREG (BB MAP) INTENSITY REPORTED AS III-IV
184	9 APR 1927	14:00:00.0	44.800N	117.200W	W1	IV						BB	RICHLAND AREA, OREG (BB MAP) INTENSITY REPORTED AS III-IV
185	7 MAY 1927	21:56:00.0	50.150N	127.850W			5.50ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 5.50 ML
186	24 JAN 1928	17:45:00.0	49.100N	122.200W			3.00ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.00 ML
187	2 FEB 1928	12:52:00.0	47.800N	121.700W		VI						R	NEAR STARTUP, WASH.
188	4 SEP 1928	LT	44.700N	124.100W		IV						BB	NEWPORT, OREG; THIS AND THE FOLLOWING SHOCK MAY BE THE SAME. TIME REPORTED AS LT
189	4 SEP 1928	04:40:00.0	44.300N	123.500W	W1	IV						BB	NEWPORT AND EUGENE, OREG. PLOTTED AT MIDPOINT.
190	5 SEP 1928	05:36:00.0	42.100N	115.200W			5.20ML					CA	ORIGINAL DATA SOURCE = EPB
191	17 JUN 1930	15:40:00.0	46.800N	122.300W		III						R	NEAR LA GRANDE, WASH.
192	7 JUL 1930	08:30:00.0	47.863N	121.817W	W	III						R	SULTAN, WASH.
193	8 JUL 1930	20:30:00.0	45.043N	123.258W	W	III						BB	PERRYDALE, OREG
194	9 JUL 1930	18: LT	47.000N	115.000W		V						EH	WESTERN MONTANA. FELT AREA NOTED AS LARGE.
195	19 JUL 1930	02:38:00.0	45.000N	123.200W		VI						BB	PERRYDALE, OREG
196	19 AUG 1930	07:05:00.0	47.800N	121.800W		IV						R	NEAR SULTAN, WASH.

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CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG	SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
197	3 SEP 1930	13:00:00.0	47.300N	117.800W		V						R	NEAR LAMONT, WASH.
198	18 APR 1931	03:55:00.0	48.700N	122.200W		VI						R	FELT OVER 5,000 SQ. MI. NEAR SEDRO-WOOLLEY, WASH.
199	12 JUN 1931	07:30:00.0	47.863N	121.817W	W	III						R	SULTAN
200	17 AUG 1931	03:20:00.0	42.300N	122.800W			4.30ML					CA	ORIGINAL DATA SOURCE = EPB
201	8 DEC 1931	14:25:00.0	47.830N	120.020W	W	IV						R	LAKESIDE-CHELAN FALLS,
202	31 DEC 1931	15:25:00.0	47.500N	123.000W		VI						R	FELT OVER 10,000 SQ. MI.
203	5 JAN 1932	23:13:00.0	48.000N	121.800W		V						R	FELT OVER 1,500 SQ. MI.
204	14 JAN 1932	16:18:00.0	45.550N	122.600W	W	IV						BB	PORTLAND, OREG
205	26 JAN 1932	10:11:54.0	52.000N	125.000W			5.00ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 5.00 ML
206	31 JAN 1932	15:25:00.0	47.800N	122.300W	W	III						R	ALDERWOOD MANOR
207	11 FEB 1932	07:10:00.0	47.863N	121.817W	W	III						R	SULTAN
208	19 FEB 1932	20:13:00.0	47.863N	121.817W	W	III						R	SULTAN
209	23 APR 1932	13:20:00.0	48.500N	122.235W	W	III						R	SEDRO-WOOLLEY
210	11 JUN 1932	02:55:00.0	48.270N	121.780W	W	IV						R	FORTSON
211	20 JUN 1932	09:26:27.0	43.000N	127.500W			5.50N'					ND	ORIGINAL DATA SOURCE = GUT MAGNITUDE(FRACTIONAL NOTATION,AVE)=5.50, AUTHORITY-PAS
212	18 JUL 1932	06:01:00.0	48.000N	121.800W		V						R	FELT OVER 14,000 SQ. MI. SULTAN, WASH.
213	6 AUG 1932	22:16:00.0	47.700N	122.300W		VI						R	FELT OVER 500 SQ. MI. SEATTLE, WASH.
214	7 AUG 1932	06:00:00.0	48.000N	121.800W		V						R	FELT OVER 7,000 SQ. MI. SULTAN, WASH.
215	15 AUG 1932	10:30:00.0	47.842N	120.013W	W	III						R	CHELAN
216	18 AUG 1932	20:23:00.4	48.390N	127.620W			5.50ML					CA	
217	25 AUG 1932	11:20:00.0	47.597N	122.330W	W	III						R	SEATTLE
218	31 AUG 1932	07:50:00.0	47.863N	121.817W	W	III						R	SULTAN
219	5 SEP 1932	18:30:00.0	47.830N	120.020W	W	III						R	LAKESIDE
220	20 SEP 1932	07:05:00.0	47.863N	121.817W	W	III						R	SULTAN
221	5 OCT. 1932	19:00:00.0	48.502N	122.610W	W	IV						R	ANACORTES

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CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG	SM	H (KM)	DIS (KM)	Q S	LOCATION AND COMMENTS
222	5 OCT 1932	19:20:00.0	48.502N	122.610W	W	IV					R	ANACORTES
223	6 OCT 1932	00:45:00.0	48.852N	122.598W	W	III					R	FERNDALE
224	3 JAN 1933	01:20:00.0	47.597N	122.330W	W	III					R	SEATTLE
225	3 JAN 1933	06:00:00.0	47.597N	122.330W	W	IV					R	SEATTLE
226	29 JAN 1933	09:45:00.0	48.117N	122.755W	W	III					R	PORT TOWNSEND
227	11 FEB 1933	01:15:00.0	47.910N	114.203W		IV					UE	FELT ROLLINS, MONT. AFTERSHOCKS DURING NIGHT
228	18 MAR 1933	09:01:00.0	47.863N	121.817W	W	III					R	SULTAN
229	29 APR 1933	09:05:00.0	47.900N	120.000W	W	III					R	CHELAN-PATEROS
230	29 MAY 1933	20:30:00.0	47.842N	120.013W	W	III					R	CHELAN
231	31 MAY 1933	20:20:00.0	47.842N	120.013W	W	IV					R	CHELAN
232	31 MAY 1933	20:30:00.0	47.842N	120.013W	W	IV					R	CHELAN
233	19 JUL 1933	05:06:36.0	43.000N	127.250W			5.25N				NO	ORIGINAL DATA SOURCE = GUT MAGNITUDE(FRACTIONAL NOTATION,AVE)=5.25, AUTHORITY-PAS
234	22 AUG 1933	11:35:00.0	47.980N	122.200W	W	IV					R	EVERETT
235	22 AUG 1933	12:30:00.0	47.762N	122.203W	W	IV					R	BOTHELL
236	22 AUG 1933	12:35:00.0	47.597N	122.330W	W	IV					R	SEATTLE
237	23 NOV 1933	14:25:00.0	45.535N	122.620W	W	III					R	PORTLAND, ORE.
238	1 JAN 1934	LT	48.713N	122.203W	W	III					R	ACME, WASH. - P.M.
239	6 FEB 1934	13:20:00.0	47.600N	122.400W		IV					R	SEATTLE-TACOMA STRONGEST INTENSITY AT GRAPEVIEW.
240	9 MAR 1934	16:00:00.0	47.830N	120.020W	W	IV					R	LAKESIDE
241	10 MAR 1934	15:53:00.0	47.800N	119.985W	W	III					R	CHELAN FALLS
242	18 MAR 1934	00:00:00.0	47.648N	120.068W	W	III					R	WATERVILLE
243	5 MAY 1934	04:06:00.0	48.000N	123.000W	W	V					R	FELT OVER 10,000 SQ. MI. JUST EAST OF VICTORIA, B.C.
244	10 MAY 1934	00:00:00.0	48.825N	122.217W	W	III					R	DEMING
245	6 JUL 1934	22:50:00.0	47.497N	121.785W	W	III					R	NORTH BEND
246	18 SEP 1934	24: LT	46.998N	120.540W	W	V					WG	ELLENSBURG, WASH. TIME REPORTED AS LT

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CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG	SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
247	22 SEP 1934	11:30:LT	46.998N	120.540W	W	IV						WG	ELLENSBURG, WASH. TIME REPORTED BY USE
248	22 SEP 1934	17:37:LT	46.998N	120.540W	W	IV						WG	ELLENSBURG, WASH. TIME REPORTED BY BY USE
249	26 SEP 1934	16:15:LT	46.998N	120.540W	W	V						WG	ELLENSBURG, WASH. TIME REPORTED BY BY USE
250	26 SEP 1934	16:45:LT	46.998N	120.540W	W	V						WG	ELLENSBURG, WASH. TIME REPORTED BY USE
251	26 SEP 1934	21:15:LT	46.998N	120.540W	W	V						WG	ELLENSBURG, WASH. TIME REPORTED BY USE
252	4 OCT 1934	02:26:LT	46.998N	120.540W	W	IV						WG	ELLENSBURG, WASH. TIME REPORTED BY USE
253	11 OCT 1934	21:19:LT	46.998N	120.540W	W	IV						WG	ELLENSBURG, WASH. TIME REPORTED BY USE
254	19 OCT 1934	23:31:LT	46.998N	120.540W	W	V						WG	ELLENSBURG, WASH. TIME REPORTED BY USE
255	29 OCT 1934	18:36:LT	46.998N	120.540W	W	IV						WG	ELLENSBURG, WASH. TIME REPORTED BY USE
256	1 NOV 1934	07:28:LT	46.998N	120.540W	W	V						WG	ELLENSBURG, WASH. TIME REPORTED BY USE
257	2 NOV 1934	15:17:LT	46.998N	120.540W	W	V						WG	ELLENSBURG, WASH. TIME REPORTED BY USE
258	3 NOV 1934	14:50:00.0	48.000N	123.000W	W	IV						R	FELT OVER 10,000 SQ. MI.
259	2 DEC 1934	13:05:00.0	48.190N	114.138W		IV						UE	CRESTON, MONT. ACCOMPANIED BY DULL RUMBLE
260	6 FEB 1935	13:20:00.0	47.333N	122.833W	W	IV						R	GRAPEVIEW
261	17 FEB 1935	06:07:00.0	48.253N	123.103W	W	III						R	DARRINGTON
262	29 MAR 1935	00:39:LT	47.800N	114.200W		V						EH	ROLLINS, MONT.
263	9 JUL 1935	22:45:00.0	47.700N	120.000W		V						R	NEAR CHELAN FALLS, WASH.
264	12 OCT 1935	01:03:00.0	47.662N	120.223W	W	V						R	ENTIAT
265	1 NOV 1935	03:35:00.0	47.472N	115.925W		IV						UE	WALLACE, IDAHO
266	28 MAR 1936	09:15:00.0	50.500N	119.500W			4.50ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 4.50 ML

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CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG	SM	H (KM)	DIS (KM)	Q S	LOCATION AND COMMENTS
267	16 JUL 1936	07:07:49.0	46.208N	118.233W	W	VII	6.10ML				W	1979 WCC RELOCATION. ORIGINAL ISS, USC AND GS LOCATION WAS 46.200N 188.200W. PAS MAG=5.75
268	16 JUL 1936	07:37:00.0	45.813N	118.491W	W	III					BB	ATHENA, OREG; AFTERSHOCK. REF GIVES THIS LOCATION AS ATHENS; HOWEVER, ATHENA WAS PROBABLY MEANT.
269	16 JUL 1936	12:30:00.0	45.950N	118.420W	W	III					R	ATHENA, ORE-WALLA WALLA; MANY AFTERSHOCKS WERE FELT
270	18 JUL 1936	16:30:00.0	45.933N	118.383W	W	V					BB	MILTON-FREEWATER, OREG; AFTERSHOCK
271	25 JUL 1936	08:45:00.0	47.700N	122.300W	W	IV					R	BOTHELL-SEATTLE
272	30 JUL 1936	11:20:00.0	45.935N	118.388W	W	IV					R	FREEWATER, ORE
273	30 JUL 1936	12:00:00.0	45.935N	118.388W	W	IV					R	FREEWATER, ORE
274	30 JUL 1936	12:20:00.0	46.070N	118.328W	W	IV					R	WALLA WALLA
275	4 AUG 1936	09:19:00.0	45.800N	118.600W	EH	V					BB	HELIX, OREG
276	24 AUG 1936	09:50:00.0	45.933N	118.383W	W	III					BB	MILTON-FREEWATER, OREG
277	28 AUG 1936	04:39:00.0	45.933N	118.383W	W	V					BB	MILTON-FREEWATER, OREG; WALLA WALLA, WASH INTENSITY IV
278	25 SEP 1936	12:53:35.0	42.500N	128.000W			6.20N'				NO	ORIGINAL DATA SOURCE = GUT MAGNITUDE(FRACTIONAL NOTATION,AVE)=6.20, AUTHORITY-PAS
279	17 NOV 1936	10:00:00.0	46.070N	118.328W	W	III					R	WALLA WALLA
280	17 NOV 1936	10:30:00.0	46.070N	118.328W	W	III					R	WALLA WALLA
281	17 NOV 1936	12:00:00.0	46.070N	118.328W	W	III					R	WALLA WALLA
282	8 FEB 1937	20:15:00.0	46.070N	118.328W	W	III					R	WALLA WALLA
283	9 FEB 1937	22:20:00.0	46.070N	118.328W	W	IV					R	WALLA WALLA
284	4 JUN 1937	14:43:00.0	46.070N	118.328W	W	IV					R	WALLA WALLA
285	1 NOV 1937	13:15:00.0	47.045N	122.670W	W	IV					R	OLYMPIA
286	10 NOV 1937	07:19:23.0	43.000N	127.000W			5.75N'				NO	ORIGINAL DATA SOURCE = GUT MAGNITUDE(FRACTIONAL NOTATION,AVE)=5.75, AUTHORITY-PAS
287	11 NOV 1937	16:30:00.0	47.045N	122.670W	W	III					R	OLYMPIA
288	14 DEC 1937	09:00:00.0	44.919N	123.317W	W	IV					BB	DALLAS, OREG; SEISMIC ORIGIN DOUBTFUL. THOUGHT BY SOME TO HAVE BEEN DUE TO METEOR.
289	18 DEC 1937	04: LT	44.500N	116.000W		V					EH	CASCADE, IDAHO. FELT AREA 1,200 SQ MI

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CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG	SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
290	6 JAN 1938	13:11:00.0	47.800N	122.400W		V						R	PUGET SOUND REGION, WASH.
291	19 FEB 1938	14:10:00.0	49.267N	123.117W	W	VI						R	VANCOUVER, B.C.
292	28 MAY 1938	10:14:01.0	42.750N	126.000W			6.00N'					NO	ORIGINAL DATA SOURCE = GUT MAGNITUDE(FRACTIONAL NOTATION,AVE)=6.00, AUTHORITY-PAS
293	23 JUL 1938	02:50:00.0	46.185N	123.835W	W	IV						R	ASTORIA, ORE.
294	3 AUG 1938	13:32:30.0	43.000N	127.500W			5.60N'					NO	ORIGINAL DATA SOURCE = GUT MAGNITUDE(FRACTIONAL NOTATION,AVE)=5.60, AUTHORITY-PAS
295	11 AUG 1938	18:52:00.0	45.935N	118.388W	W	IV						R	MILTON, ORE
296	27 OCT 1938	23:10:00.0	45.935N	118.388W	W	IV						R	MILTON, ORE
297	26 JAN 1939	07:59:00.0	45.700N	118.700W	R2	IV						R	MISSION, ORE.
298	14 FEB 1939	13:00:00.0	45.453N	123.843W	W	IV						BB	TILLAMOOK AREA, OREG (ASSUMED AS TILLAMOOK)
299	13 APR 1939	19:45:00.0	45.535N	122.620W	W	III						R	PORTLAND, ORE.
300	13 NOV 1939	07:44:50.0	47.200N	123.000W		VII						R	FELT OVER 60,000 SQ. MI.
301	15 NOV 1939	00:00:00.0	45.535N	122.620W	W	III						R	PORTLAND, ORE.
302	23 MAR 1940	03:10:00.0	47.300N	122.600W	W	III						R	SEATTLE-OLYMPIA
303	24 MAR 1940	03:04:00.0	46.000N	121.200W	W	IV						R	MT. RAINIER, FELT OVER 15,000 SQ. MI.
304	25 APR 1940	18:11:00.0	47.597N	122.330W	W	III						R	SEATTLE
305	25 APR 1940	19:02:00.0	47.597N	122.330W	W	III						R	SEATTLE
306	25 MAY 1940	16:02:00.0	44.430N	124.063W	W	IV						DB	WALDPORT, OREG
307	11 JUN 1940	18:50:12.0	53.000N	125.000W			4.30ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 4.30 ML
308	27 OCT 1940	22:30:00.0	48.100N	122.800W	W	V						R	PORT ANGELES-PORT TOWNSEND-EVERETT, FELT OVER 12,000 SQ. MI.
309	14 NOV 1940	07:24:00.0	47.700N	121.500W		III						R	PROBABLY SAME AS PRECEEDING. COORDINATES APPEAR IN ERROR SINCE FELT MOST STRONGLY IN SEATTLE - TACOMA AREA.
310	7 APR 1941	09:25:00.0	48.300N	119.600W	W	VI	4.50					R	FELT OVER 5,500 SQ. MI.
311	12 APR 1941	17:40:00.0	47.648N	120.069W	W	IV						R	WATERVILLE, FELT

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CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
312	9 JUN 1941	06:17:26.0	42.750N	126.000W			5.25N'				NO	ORIGINAL DATA SOURCE = GUT MAGNITUDE(FRACTIONAL NOTATION,AVE)=5.25, AUTHORITY-PAS
313	9 JUN 1941	08:43:45.0	42.750N	126.000W			5.00N'				NO	ORIGINAL DATA SOURCE = GUT MAGNITUDE(FRACTIONAL NOTATION,AVE)=5.00, AUTHORITY-PAS
314	26 JUL 1941	20:00:00.0	45.430N	122.774W	W	IV					BB	TIGARD, OREG; IT IS POSSIBLE THAT THERE WAS BLASTING ON THE HIGHWAY AT DURAM THAT CAUSED THIS.
315	20 OCT 1941	06:05:00.0	44.493N	124.083W	W	III					BB	SEAL ROCK, OREG
316	31 OCT 1941	12:43:00.0	45.535N	122.620W	W	IV					R	PORTLAND, ORE.
317	23 DEC 1941	17:48:00.0	44.800N	117.000W	W1	IV					BB	ROBINETTE, OREG (BB MAP) INTENSITY REPORTED AS III-IV
318	23 DEC 1941	22:20:00.0	44.800N	117.000W	W1	IV					BB	ROBINETTE, OREG (BB MAP) INTENSITY REPORTED AS III-IV.
319	29 DEC 1941	18:37:00.0	45.535N	122.620W	W	VI					R	PORTLAND, ORE., FELT OVER 5,000 SQ. MI.
320	31 JAN 1942	06:49:11.3	51.180N	123.580W			5.50ML				CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 5.50 ML
321	23 FEB 1942	14:03:00.0	47.600N	120.200W	W	V					R	WENATCHEE-CHELAN FALLS. TIME REPORTED BY USE
322	13 MAY 1942	00:52:00.0	44.600N	123.400W			4.30ML				CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 4.30 ML
323	12 JUN 1942	09:30:00.0	44.900N	117.100W	EH	V					BB	HALFWAY AND PINE, OREG
324	12 JUN 1942	09:35:00.0	44.860N	117.086W	W	III					BB	PINE, OREG
325	14 JUN 1942	06:00:00.0	44.860N	117.086W	W	III					BB	PINE, OREG
326	6 OCT 1942	02:58:18.0	43.500N	126.800W			4.70ML				CA	ORIGINAL DATA SOURCE = EPB
327	14 OCT 1942	11:30:00.0	48.310N	120.652W	W	V					R	STEHEKIN. TIME REPORTED BY USE
328	1 NOV 1942	17:00:00.0	45.600N	122.700W		V					R	PORTLAND, OREGON. RASMUSSEN GIVES TIME INCORRECTLY AS 18:00
329	1 NOV 1942	18:50:06.0	48.000N	116.700W		VI	5.50ML				EH	SANDPOINT, IDAHO; FELT AREA 25,000 SQ MI; INSTR. ORIGIN TIME AND EPICENTER
330	1 NOV 1942	19:30:00.0	44.632N	121.130W	W	IV					BB	MADRAS, OREG
331	27 NOV 1942	10:55:48.0	42.200N	126.000W			4.90ML				CA	ORIGINAL DATA SOURCE = EPB
332	24 APR 1943	00:10:46.0	47.300N	120.600W		VI					R	FELT OVER 10,000 SQ. MI.

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG	SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
333	24 MAY 1943	LT	47.317N	119.533W	W	III						WG	EPHRATA, WASH. TIME REPORTED AS LT
334	24 JUN 1943	16:44:00.0	44.058N	121.308W	W	III						BB	BEND, OREG
335	4 AUG 1943	LT	44.900N	116.900W	W1	III						BB	ROCKVILLE, OREG (BB MAP); MINOR TREMORS WERE FELT MORE OR LESS CONTINUOUSLY FOR 3 DAYS AT THE LEAKE RANCH. TREMORS ARE PROBABLY RELATED TO A STEAM VENT IN THE HILLSIDE NEAR THE RANCH. SIMILAR DISTURBANCES HAVE OCCURRED FOR THE PAST 6 OR 7 YEARS. TIME REPORTED AS LT
336	22 SEP 1943	21:50:LT	47.967N	119.000W	W	IV						WG	GRAND COULEE, WASH. TIME REPORTED BY USE
337	6 OCT 1943	15:09:00.0	47.522N	121.815W	W	V						R	SNOQUALMIE
338	29 NOV 1943	00:43:00.0	48.400N	122.900W	W	VI						R	FELT OVER 9000 SQ. MI. TIME REPORTED BY USE
339	3 MAR 1944	00:00:00.0	47.300N	122.600W	W	III						R	SEATTLE-OLYMPIA
340	5 MAR 1944	09:00:00.0	44.919N	123.317W	W	III						BB	DALLAS, OREG
341	5 MAR 1944	13:00:00.0	44.919N	123.317W	W	V						BB	DALLAS, OREG
342	31 MAR 1944	21:15:00.0	47.000N	123.000W		V						R	FELT OVER 2,500 SQ. MI. TIME REPORTED BY USE
343	1 APR 1944	00:00:00.0	46.265N	122.155W	W	III						R	SPIRIT LAKE, OCCURRED BETWEEN 05:30 AND 06:00.
344	10 MAY 1944	03:30:30.0	47.497N	121.785W	W	III						R	NORTH BEND. TIME REPORTED BY USE
345	12 JUL 1944	19:30:23.0	44.500N	115.500W		VII	6.10N'					NO	REPORTED FELT INFORMATION ORIGINAL DATA SOURCE = GUT MAGNITUDE(FRACTIONAL NOTATION,AVE)=6.10, AUTHORITY=PAS
346	21 JUL 1944	12:25:00.0	42.500N	127.000W			4.00ML					CA	ORIGINAL DATA SOURCE = EPB
347	2 SEP 1944	01:25:14.0	46.070N	118.328W	W	IV						R	WALLA WALLA . TIME REPORTED BY USE
348	8 SEP 1944	06:16:52.0	46.900N	122.500W	W	IV						R	ELBE-OLYMPIA. TIME REPORTED BY USE
349	16 SEP 1944	22:44:42.0	42.500N	127.000W			4.30ML					CA	ORIGINAL DATA SOURCE = EPB
350	18 SEP 1944	08:14:00.0	47.100N	122.700W	W	IV						R	OLYMPIA-TACOMA. TIME REPORTED BY USE
351	18 SEP 1944	08:52:37.0	47.100N	122.700W	W	IV						R	OLYMPIA-TACOMA. TIME REPORTED BY USE
352	20 SEP 1944	03:00:00.0	44.900N	116.900W	W1	IV						BB	ROCKVILLE, OREG (BB MAP)

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG	SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
353	7 OCT 1944	18:45:00.0	47.800N	119.985W	W	III						R	CHELAN FALLS. TIME REPORTED BY USE
354	31 OCT 1944	11:34:28.7	47.800N	120.600W		V						R	TIME REPORTED BY USE
355	7 DEC 1944	04:48:00.0	46.977N	123.890W	W	VI						R	HOQUIAM
356	21 DEC 1944	05:19:06.0	42.000N	125.000W			4.70ML					CA	ORIGINAL DATA SOURCE = EPB
357	25 DEC 1944	13:12:08.8	47.662N	120.223W	W	IV						R	ENTIAT. TIME REPORTED BY USE
358	30 DEC 1944	22:03:02.0	43.750N	126.750W			5.75N'					NO	ORIGINAL DATA SOURCE = GUT MAGNITUDE(FRACTIONAL NOTATION,AVE)=5.75, AUTHORITY-PAS
359	4 JAN 1945	02:34:48.7	47.662N	120.223W	W	V						R	ENTIAT
360	28 JAN 1945	05:06:08.1	48.242N	122.377W	W	VI						R	STANWOOD, 50 MI. NORTH OF SEATTLE.
361	14 FEB 1945	03:01:15.0	44.700N	115.400W		VI	6.00N'					NO	REPORTED FELT INFORMATION ORIGINAL DATA SOURCE = CGS MAGNITUDE(FRACTIONAL NOTATION,AVE)=6.00, AUTHORITY-PAS
362	27 FEB 1945	11:00:00.0	48.480N	121.190W	W	IV						R	WINTHROP.TIME REPORTED BY USE
363	2 MAR 1945	07:54:59.3	47.662N	120.223W	W	IV						R	ENTIAT. TIME REPORTED BY USE
364	11 APR 1945	11:22:57.0	42.000N	126.000W			5.00ML					CA	ORIGINAL DATA SOURCE = EPB
365	29 APR 1945	20:16:17.0	47.400N	121.700W		VII	5.50N'					NO	REPORTED FELT INFORMATION ORIGINAL DATA SOURCE = USE MAGNITUDE(FRACTIONAL NOTATION,AVE)=5.50, AUTHORITY-PAS
366	30 APR 1945	07:45:45.0	47.400N	121.700W		VI						R	AFTERSHOCK. TIME REPORTED BY USE
367	1 MAY 1945	19:46:04.0	47.400N	121.700W		V						R	TWO AFTERSHOCKS V, OTHERS FELT. TIME REPORTED BY USE
368	15 JUN 1945	22:24:21.0	49.000N	123.500W		V	4.20ML					R	CANADIAN BORDER-STRAITS OF GEORGIA, NEAR POINT ROBERTS TIME REPORTED BY USE
369	23 SEP 1945	02:40:00.0	46.070N	118.328W	W	IV						R	WALLA WALLA. TIME REPORTED BY USE
370	23 SEP 1945	09:58:48.0	48.000N	114.200W		VI						UE	W SIDE OF FLATHEAD LAKE 20 MI N OF POLSON, MONT. FELT AREA APPROX. 36,000 SQ MI
371	28 SEP 1945	22:24:10.0	42.000N	126.000W			6.00N'					NO	ORIGINAL DATA SOURCE = GUT MAGNITUDE(FRACTIONAL NOTATION,AVE)=6.00, AUTHORITY-PAS
372	12 NOV 1945	04:05:00.0	48.000N	122.500W	W	VI						R	NORTHERN PUGET SOUND. TIME REPORTED BY USE
373	21 NOV 1945	00:29:56.2	50.230N	127.370W			4.50					CA	

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG	SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
374	23 NOV 1945	23:30:00.0	46.607N	121.670W	W	IV						R	PACKWOOD. TIME REPORTED BY USE
375	5 FEB 1946	16:12:42.0	47.800N	120.200W	W	IV						R	CHELAN-ARDENVOIR, FELT
376	6 FEB 1946	03:20:00.0	48.527N	121.430W	W	IV						R	MARBLEMOUNT
377	6 FEB 1946	10:11:00.0	48.500N	122.235W	W	IV						R	SEDRO-WOOLLEY
378	15 FEB 1946	03:17:47.0	47.300N	122.900W		VII	5.75N'		25			NO	REPORTED DAMAGE ORIGINAL DATA SOURCE = USE MAGNITUDE(FRACTIONAL NOTATION,AVE)=5.75
379	15 FEB 1946	12:17:15.0	46.870N	122.268W	W	VI						R	EATONVILLE
380	23 FEB 1946	08:54:53.0	47.045N	122.890W	W	VI						R	OLYMPIA
381	20 MAR 1946	04:27:00.0	47.500N	122.000W	W	V						R	ISSAQUAH-KIRKLAND
382	23 JUN 1946	17:13:19.0	49.900N	125.300W		VIII	7.30N'					NO	REPORTED DAMAGE ORIGINAL DATA SOURCE = OTT ISOSEISMAL MAP PUBLISHED BY USE MAGNITUDE(FRACTIONAL NOTATION,AVE)=7.30, AUTHORITY-PAS
383	5 JUL 1946	02:41:18.4	49.830N	125.500W		.	4.50ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 4.50 ML
384	11 DEC 1946	06:09:LT	48.400N	114.400W		VI						EH	NORTHWESTERN MONTANA. FELT AREA 3,000 SQ MI TIME REPORTED BY USE
385	27 DEC 1946	16:43:00.0	47.400N	122.500W	W	IV						R	BREMERTON-TACOMA
386	5 JAN 1947	LT	47.600N	122.330W	W	III						WG	SOUTH SEATTLE, WASH. TIME REPORTED AS LT
387	12 JAN 1947	09:40:00.0	47.537N	121.810W	W	V						R	SNOQUALMIE FALLS
388	2 APR 1947	00:58:00.0	47.400N	122.900W	W	V						R	OLYMPIA-QUILCENE
389	20 SEP 1947	10:30:00.0	47.200N	122.400W	W	V						R	PUYALLUP-TACOMA
390	22 SEP 1947	02:16:01.0	43.500N	128.000W			5.50ML					CA	ORIGINAL DATA SOURCE = EPB :
391	22 DEC 1947	10:30:00.0	47.662N	120.223W	W	IV						R	ENTIAT
392	10 JAN 1948	00:45:50.0	42.000N	127.000W			5.30ML					CA	ORIGINAL DATA SOURCE = EPB
393	13 JAN 1948	06:55:00.0	47.900N	120.300W	W	V						R	LUCERNE-WATERVILLE
394	13 FEB 1948	21:00:00.0	46.632N	123.058W	W	IV						R	ADNA
395	1 MAR 1948	06:30:00.0	45.683N	123.200W	W	IV						R	BUXTON, ORE.

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CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL.	INTEN (MM)	MAG SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
396	25 MAY 1948	15:13:07.0	44.000N	127.000W			5.50N'				NO	ORIGINAL DATA SOURCE = GUT MAGNITUDE(FRACTIONAL NOTATION,AVE)=5.50, AUTHORITY-PAS
397	25 MAY 1948	15:32:02.0	43.500N	127.000W			5.70ML				CA	ORIGINAL DATA SOURCE = EPB
398	3 AUG 1948	12:00:00.0	47.537N	121.810W	W	V					R	SNOQUALMIE FALLS
399	7 AUG 1948	02:05:00.0	46.662N	122.963W	W	III					R	CHEHALIS
400	28 AUG 1948	22:25:00.0	47.957N	117.475W	W	IV					R	DEER PARK, 2 MI E OF DENISON
401	24 SEP 1948	22:35:00.0	47.855N	122.587W	W	VI					R	PORT GAMBLE
402	25 OCT 1948	19:50:00.0	47.842N	120.013W	W	IV					R	CHELAN
403	20 DEC 1948	16:18:00.0	44.996N	120.215W	W	IV					BB	FOSSIL, OREG
404	6 FEB 1949	19:00:00.0	46.448N	120.422W	W	III					R	WAPATO
405	15 MAR 1949	20:53:11.0	45.500N	117.000W			4.80ML				CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 4.80 ML
406	24 MAR 1949	20:56:56.0	42.000N	126.000W			6.20N'				NO	REPORTED FELT INFORMATION ORIGINAL DATA SOURCE = GUT MAGNITUDE(FRACTIONAL NOTATION,AVE)=6.20, AUTHORITY-PAS
407	28 MAR 1949	19:43:16.0	42.000N	126.000W			5.80ML				CA	ORIGINAL DATA SOURCE = EPB
408	30 MAR 1949	20:28:28.0	49.000N	127.500W			4.80ML				CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 4.80 ML
409	1 APR 1949	16:45:45.0	43.500N	126.000W			4.90ML				CA	ORIGINAL DATA SOURCE = EPB
410	13 APR 1949	19:55:43.0	47.250N	122.500W		VIII	7.00N'				NO	REPORTED CASUALTIES ORIGINAL DATA SOURCE = GUT ISOSEISMAL MAP PUBLISHED BY USE MAGNITUDE(FRACTIONAL NOTATION,AVE)=7.00, AUTHORITY-PAS
411	1 JUN 1949	08:23:15.0	47.500N	124.500W			4.00ML				CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 4.00 ML
412	24 AUG 1949	06:07:15.0	43.500N	127.000W			5.50N'				NO	ORIGINAL DATA SOURCE = GUT MAGNITUDE(FRACTIONAL NOTATION,AVE)=5.50, AUTHORITY-PAS
413	27 SEP 1949	01:45:00.0	47.420N	120.317W	W	III					R	WENATCHEE
414	20 OCT 1949	16:00:00.0	48.500N	120.500W	W	IV					R	LOST RIVER, NEAR MAZAMA
415	29 NOV 1949	13:03:00.0	47.600N	122.500W	W	IV					R	SEATTLE-BREMERTON
416	2 JAN 1950	05:02:03.0	43.000N	128.000W			4.20ML				CA	ORIGINAL DATA SOURCE = EPB

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CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
417	27 JAN 1950	10:47:18.0	42.000N	125.000W			4.70ML				CA	ORIGINAL DATA SOURCE = EPB
418	11 FEB 1950	02:10:00.0	47.192N	114.888W		IV					UE	SUPERIOR, MONT.
419	8 MAR 1950	06:25:00.0	47.662N	120.223W	W	IV					R	ENTIAT
420	14 APR 1950	11:03:48.0	48.000N	122.500W		VI					R	FELT OVER 7,000 SQ. MI.
421	25 APR 1950	22:38:07.0	43.500N	127.500W			4.50ML				CA	ORIGINAL DATA SOURCE = EPB
422	16 MAY 1950	LT	48.500N	122.000W	W	III					WG	WHATCOM AND SKAGIT CO., WASH. TIME REPORTED AS LT
423	19 JUN 1950	18:30:13.0	44.000N	127.000W			4.20ML				CA	ORIGINAL DATA SOURCE = EPB
424	25 JUN 1950	23:45:00.0	47.491N	117.575W	W	IV					R	CHENEY
425	24 AUG 1950	17:45:34.0	42.500N	126.000W			5.60ML				CA	ORIGINAL DATA SOURCE = EPB
426	31 AUG 1950	18:47:43.0	42.000N	125.000W			4.20ML				CA	ORIGINAL DATA SOURCE = EPB
427	18 OCT 1950	02:30:LT	44.500N	116.000W		V					EH	CASCADE, IDAHO; FELT LOCALLY; SERIES OF MINOR SHOCKS, 02:30, 07:00, 10:30, AND 15:30 LT.
428	18 OCT 1950	07: LT	44.500N	116.000W		V					EH	CASCADE, IDAHO.
429	18 OCT 1950	10:30:LT	44.500N	116.000W		V					EH	CASCADE, IDAHO.
430	18 OCT 1950	15:30:LT	44.500N	116.000W		V					EH	CASCADE, IDAHO.
431	3 DEC 1950	01:57:00.0	47.947N	122.300W	W	V	2.50ML				R	MUKILTEO
432	16 DEC 1950	10:49:01.0	43.500N	127.000W			4.50ML				CA	ORIGINAL DATA SOURCE = EPB
433	4 JAN 1951	13:45:00.0	47.700N	120.000W	W	V					R	CHELAN-WATERVILLE
434	7 JAN 1951	22:45:00.0	45.900N	119.200W	W1	V					DD	MCNARY, OREG (BD MAP)
435	29 JAN 1951	05:43:47.0	43.000N	128.000W			5.00ML				CA	ORIGINAL DATA SOURCE = EPB
436	14 FEB 1951	00:51:48.0	44.000N	127.000W			4.00ML				CA	ORIGINAL DATA SOURCE = EPB
437	20 JUL 1951	07:45:00.0	48.052N	122.175W	W	III					R	MARYSVILLE
438	8 AUG 1951	22:48:40.0	44.000N	128.000W			4.20ML				CA	ORIGINAL DATA SOURCE = EPB
439	17 AUG 1951	23:40:44.0	49.220N	122.600W			3.00ML				CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.00 ML
440	23 AUG 1951	07:54:07.0	48.500N	124.970W			3.00ML				CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.00 ML

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG	SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
441	6 SEP 1951	04:28:37.0	48.680N	123.380W			3.00ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.00 ML
442	11 SEP 1951	15:19:20.0	48.200N	114.000W	W	IV						UE	3 OR 4 MINOR QUAKES FELT BY DEER PARK COMMUNITY, MONT
443	22 SEP 1951	10:16:51.2	48.120N	127.790W			4.50ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.00 ML
444	7 OCT 1951	11:59:31.0	47.670N	123.500W			3.00ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.00 ML
445	9 OCT 1951	22:59:27.7	48.180N	122.770W		IV					B		NO REPORTED FELT INFORMATION HYPOCENTER/EPICENTER DETERMINED BY BERKELEY ORIGINAL DATA SOURCE = USE
446	13 OCT 1951	19:45:06.0	43.500N	127.000W			4.50ML					CA	ORIGINAL DATA SOURCE = EPB
447	4 NOV 1951	03:36:11.0	48.000N	124.000W			3.00ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.00 ML
448	11 NOV 1951	11:00:00.0	48.767N	114.280W		IV						UE	POLEBRIDGE, MONT. (AWAKENED OBSERVER) (BETWEEN 1100 AND 1130)
449	26 DEC 1951	06:31:46.0	43.500N	127.000W			4.30ML					CA	ORIGINAL DATA SOURCE = EPB
450	4 JAN 1952	04:00:00.0	47.813N	114.605W		IV						UE	FELT NIARADA, MONT.
451	29 JAN 1952	23:45:45.0	43.500N	127.000W			4.20ML					CA	ORIGINAL DATA SOURCE = EPB
452	6 FEB 1952	14:04:07.0	49.070N	122.320W			3.50ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.50 ML
453	20 FEB 1952	19:07:07.0	48.700N	123.200W		IV						R	FELT OVER 7,000 SQ. MI.
454	21 FEB 1952	00:00:00.0	48.517N	122.175W	W	III						R	LOPEZ
455	22 FEB 1952	09:39:31.2	48.600N	123.100W		V						R	FELT OVER 7,000 SQ. MI.
456	2 MAR 1952	00:11:54.0	49.170N	123.970W			3.00ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.00 ML
457	4 MAR 1952	19:42:00.0	47.672N	117.405W	W	V						R	SPOKANE
458	14 MAR 1952	14:59:36.4	48.600N	123.100W		IV						R	
459	21 MAR 1952	04:41:43.0	48.680N	123.530W			3.00ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.00 ML
460	22 MAR 1952	02:01:36.2	47.700N	122.400W		III						R	

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CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG	SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
461	4 APR 1952	20:51:06.0	48.680N	123.130W			3.00ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.00 ML
462	11 APR 1952	09:48:37.0	48.600N	124.280W			3.50ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.50 ML
463	14 APR 1952	13:37:00.0	47.200N	114.100W			4.30ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 4.30 ML LOCALTIME.
464	15 APR 1952	14:20:00.0	47.743N	115.482W		IV						UE	WHITEPINE, MONT. SHARP
465	16 APR 1952	22:25:41.0	48.320N	123.220W			3.00ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.00 ML
466	1 MAY 1952	20:12:37.0	48.350N	123.470W			3.00ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.00 ML
467	19 MAY 1952	18:36:12.0	48.270N	123.580W			3.50ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.50 ML
468	23 JUN 1952	23:52:43.0	49.200N	123.900W			3.00ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.00 ML
469	4 JUL 1952	22:54:00.0	49.500N	121.500W			3.50ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.50 ML
470	15 JUL 1952	10:08:00.0	49.900N	124.250W			3.00ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.00 ML
471	26 JUL 1952	14:13:51.0	49.330N	123.750W			3.00ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.00 ML
472	27 JUL 1952	19:52:16.1	47.800N	121.900W		IV						R	SEATTLE, WASH.
473	27 JUL 1952	20:14:00.0	47.800N	121.900W		IV						R	SEATTLE, WASH.
474	6 AUG 1952	17:31:00.0	47.500N	122.400W		V						R	
475	20 AUG 1952	15:25:04.0	43.250N	126.500W			6.50N'					NO	ORIGINAL DATA SOURCE = GUT MAGNITUDE(FRACTIONAL NOTATION,AVE)=6.50, AUTHORITY-PAS
476	21 AUG 1952	09:44:48.0	43.000N	127.000W			4.00ML					CA	ORIGINAL DATA SOURCE = EPB
477	21 AUG 1952	19:08:30.0	43.500N	127.000W			4.10ML					CA	ORIGINAL DATA SOURCE = EPB
478	9 SEP 1952	09:30:00.0	48.698N	116.315W		IV						UE	FELT BONNERS FERRY, IDAHO AND VICINITY SEVERAL AWAKENED, HEARD RUMBLINGS
479	9 SEP 1952	09:45:00.0	48.698N	116.315W		IV						UE	FELT BONNERS FERRY, IDAHO AND VICINITY

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
480	22 SEP 1952	07:21:46.0	48.550N	122.850W			3.00ML				CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.00 ML
481	4 OCT 1952	12:18:17.0	49.930N	123.970W			3.00ML				CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.00 ML
482	7 OCT 1952	07:03:36.0	42.000N	127.000W			5.40ML				CA	ORIGINAL DATA SOURCE = EPB
483	7 OCT 1952	07:30:32.0	42.000N	127.000W			4.50ML				CA	ORIGINAL DATA SOURCE = EPB
484	7 OCT 1952	08:43:57.0	42.000N	127.500W			4.60ML				CA	ORIGINAL DATA SOURCE = EPB
485	11 OCT 1952	10:06:00.0	49.800N	119.500W			3.50ML				CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.50 ML
486	21 OCT 1952	21:10:33.0	48.700N	123.280W			3.00ML				CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.00 ML
487	28 OCT 1952	15:55:27.0	48.700N	123.300W			3.00ML				CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.00 ML
488	10 NOV 1952	22:54:00.0	47.600N	121.900W			3.50ML				CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.50 ML
489	19 NOV 1952	12:28:00.0	48.530N	124.820W			3.00ML				CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.00 ML
490	20 NOV 1952	21:31:00.0	48.900N	123.930W			3.00ML				CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.00 ML
491	10 DEC 1952	13:55:00.0	50.600N	122.700W			3.50ML				CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.50 ML
492	8 JAN 1953	05:26:04.0	47.500N	124.500W			3.00ML				CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.00 ML
493	20 JAN 1953	06:54:05.0	48.700N	123.100W			3.00ML				CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.00 ML
494	3 FEB 1953	11:18:33.0	50.300N	116.920W			3.00ML				CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.00 ML
495	21 FEB 1953	11:26:00.0	48.570N	123.730W			3.00ML				CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.00 ML
496	24 FEB 1953	19:39:05.0	47.597N	122.330W	W	IV					R	SEATTLE
497	25 FEB 1953	09:29:00.0	48.630N	123.120W			3.00ML				CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.00 ML

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG SM	H (KM)	DIS (KM)	Q S	LOCATION AND COMMENTS
498	22 MAR 1953	20:15:57.0	48.870N	125.250W			3.00ML			CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.00 ML
499	6 APR 1953	18:28:20.0	42.400N	122.900W			3.60ML			CA	ORIGINAL DATA SOURCE = EPB
500	10 APR 1953	11:07:00.0	46.933N	124.083W	W	IV				R	GRAYS HARBOR
501	27 APR 1953	15:30:00.0	46.607N	121.670W	W	III				R	PACKWOOD
502	27 MAY 1953	09:30:00.0	48.500N	122.235W	W	IV				R	SEDRO-WOOLLEY, EPICENTER ABOUT 15 MI. NORTHWEST OF SEDRO-WOOLLEY.
503	11 JUN 1953	23:37:32.0	49.820N	123.870W			3.00ML			CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.00 ML
504	5 JUL 1953	13:55:07.0	48.250N	124.300W			3.00ML			CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.00 ML
505	8 JUL 1953	03:01:15.0	42.400N	119.100W			3.50ML			CA	ORIGINAL DATA SOURCE = EPB
506	11 JUL 1953	08:13:30.0	48.230N	122.870W			3.50ML			CA	
507	22 JUL 1953	10:17:39.0	48.500N	128.000W			3.60ML			CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.60 ML
508	22 JUL 1953	10:37:20.0	48.500N	128.000W			3.50ML			CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.50 ML
509	8 AUG 1953	09:50:LT	48.000N	114.000W		VI				EH	FLATHEAD LAKE, MONT.
510	10 AUG 1953	11:22:25.0	48.830N	122.920W			3.00ML			CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.00 ML
511	20 AUG 1953	18:32:41.0	47.800N	123.800W			3.00ML			CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.00 ML
512	9 SEP 1953	09:30:00.0	48.698N	116.315W		IV				UE	FELT BONNERS FERRY, IDAHO
513	28 SEP 1953	06:41:41.0	44.500N	128.000W			4.30ML			CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 4.30 ML
514	4 OCT 1953	19:41:14.0	50.000N	123.500W			3.00ML			CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.00 ML
515	16 DEC 1953	04:32:12.0	45.500N	122.700W	EH	VI				BB	PORTLAND, OREG
516	20 DEC 1953	11:35:33.0	48.600N	121.800W			3.00ML			CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.00 ML
517	23 DEC 1953	11:45:03.0	42.500N	127.100W			3.70ML			CA	ORIGINAL DATA SOURCE = EPB

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG	SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
518	3 JAN 1954	09:48:33.0	43.000N	125.000W			4.80ML					CA	ORIGINAL DATA SOURCE = EPB
519	3 JAN 1954	11:14:52.0	43.000N	125.000W			4.90ML					CA	ORIGINAL DATA SOURCE = EPB
520	7 JAN 1954	21:39:47.0	42.500N	125.900W			3.50ML					CA	ORIGINAL DATA SOURCE = EPB
521	26 JAN 1954	23:10:55.0	49.270N	123.030W			3.00ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.00 ML
522	1 FEB 1954	03:33:19.0	43.000N	114.000W			4.40ML					CA	ORIGINAL DATA SOURCE = EPB
523	7 FEB 1954	10:40:39.0	48.750N	123.530W			3.00ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.00 ML
524	16 MAR 1954	15:56:09.0	47.100N	121.800W		V					W		NO REPORTED FELT INFORMATION ORIGINAL DATA SOURCE = USE PARAMETERS OF EPICENTER FROM UNIV. WASHINGTON, SEATTLE
525	25 MAR 1954	21:16:35.0	48.230N	123.670W			3.00ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.00 ML
526	25 MAR 1954	21:31:00.0	49.280N	123.750W			3.00ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.00 ML
527	30 MAR 1954	05:29:18.0	48.920N	123.270W			3.00ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.00 ML
528	4 APR 1954	12:42:29.0	48.520N	124.530W			3.00ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.00 ML
529	5 APR 1954	19:35:53.0	48.000N	128.000W			4.30ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 4.30 ML
530	12 APR 1954	23:32:00.0	49.200N	122.100W			3.00ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.00 ML
531	15 APR 1954	19:20:00.0	49.370N	120.580W			3.50ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.50 ML
532	23 APR 1954	19:19:26.0	45.100N	122.900W			4.00ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 4.00 ML
533	5 MAY 1954	01:42:00.0	47.300N	122.400W			4.30ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 4.30 ML
534	10 MAY 1954	05:11:00.0	50.300N	124.700W			3.00ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.00 ML
535	15 MAY 1954	13:02:32.0	47.400N	122.500W			5.00ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 5.00 ML

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
536	22 MAY 1954	12:47:00.0	48.200N	124.600W			3.00ML				CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.00 ML
537	23 MAY 1954	13:41:42.0	48.342N	120.137W	W	V					R	TWISP
538	3 JUN 1954	07:58:00.0	48.000N	123.500W			3.00ML				CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.00 ML
539	8 JUN 1954	00:16:13.0	47.500N	116.000W		V					UE	FELT MORTAERN, IDAHO, COEUR D'ALENE AND KELLOG
540	5 JUL 1954	01:13:00.0	48.000N	127.000W			3.00ML				CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.00 ML
541	15 JUL 1954	21:43:00.0	49.000N	122.200W			3.00ML				CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.00 ML
542	16 JUL 1954	19:40:37.0	49.180N	123.970W			3.00ML				CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.00 ML
543	21 JUL 1954	02:17:35.0	50.150N	123.700W			3.00ML				CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.00 ML
544	1 AUG 1954	17:21:59.0	48.650N	123.330W			3.00ML				CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.00 ML
545	2 AUG 1954	07:23:53.0	48.420N	123.800W			3.00ML				CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.00 ML
546	5 AUG 1954	10:26:56.0	48.880N	122.950W			3.00ML				CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.00 ML
547	1 SEP 1954	12:42:00.0	48.200N	123.000W			3.00ML				CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.00 ML
548	4 SEP 1954	21:49:00.0	48.730N	121.750W			3.00ML				CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.00 ML
549	15 SEP 1954	03:37:00.0	48.800N	121.500W			3.00ML				CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.00 ML
550	28 OCT 1954	13:09:18.0	48.195N	114.313W		IV					UE	FELT KALISPELL, MONT. (HOUSE SHAKEN STRONGLY)
551	3 NOV 1954	05:35:00.0	48.400N	123.000W			3.00ML				CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.00 ML
552	8 NOV 1954	02:52:29.0	48.670N	123.180W			3.00ML				CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.00 ML
553	11 NOV 1954	22:15:12.0	46.688N	123.732W	W	III					R	RAYMOND
554	11 NOV 1954	22:30:00.0	46.688N	123.732W	W	III					R	RAYMOND

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG SM	H (KM)	DIS (KM)	Q S	LOCATION AND COMMENTS
555	12 NOV 1954	23:31:00.0	48.300N	123.550W			3.00ML			CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.00 ML
556	20 NOV 1954	10:13:00.0	48.850N	123.250W			3.00ML			CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.00 ML
557	2 DEC 1954	09:06:12.0	43.500N	125.000W			3.00ML			CA	ORIGINAL DATA SOURCE = EPB
558	3 DEC 1954	08:46:02.0	44.000N	127.000W			3.60ML			CA	ORIGINAL DATA SOURCE = EPB
559	11 JAN 1955	10:20:11.0	47.970N	123.830W			3.10ML			CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.10 ML
560	3 FEB 1955	03:10:16.0	44.500N	128.000W			4.70ML			CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 4.70 ML
561	6 FEB 1955	LT	47.967N	119.000W	W	IV				WG	GRAND COULEE, WASH. LOCALLY FELT ONLY. TIME REPORTED AS LT
562	27 FEB 1955	20:55:00.0	51.400N	125.300W			3.50ML			CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.50 ML
563	20 MAR 1955	14:42:16.0	48.700N	127.300W			3.10ML			CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.10 ML
564	26 MAR 1955	06:55:50.0	48.050N	122.033W		VI				W	NO REPORTED FELT INFORMATION ORIGINAL DATA SOURCE = USE ISOSEISMAL MAP PUBLISHED BY USE PARAMETERS OF EPICENTER FROM UNIV. WASHINGTON, SEATTLE
565	26 APR 1955	00:13:12.0	48.850N	122.980W			3.00ML			CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.00 ML
566	16 MAY 1955	03:01:27.0	47.800N	125.300W			3.00ML			CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.00 ML
567	31 MAY 1955	23:35:00.0	47.680N	116.773W		IV				UE	FELT COEUR D'ALENE, IDAHO HEAVY JAR, BELIEVED TO BE AN EARTHQUAKE
568	1 JUN 1955	04:56:00.0	49.480N	114.631W		V				UE	MONTANA SHARP AT TRIDENT, CAUSING MOST PEOPLE TO LEAVE HOMES
569	4 JUL 1955	15:05:52.0	51.100N	125.800W			3.00ML			CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.00 ML
570	5 JUL 1955	07:52:10.0	48.720N	123.550W			3.00ML			CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.00 ML
571	22 JUL 1955	17:33:25.0	48.600N	121.800W			3.00ML			CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.00 ML

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG	SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
572	23 JUL 1955	19:02:34.0	47.700N	123.300W			3.00ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.00 ML
573	29 JUL 1955	13:35:12.0	48.300N	122.900W			3.00ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.00 ML
574	21 AUG 1955	12:34:09.0	44.500N	120.000W			3.00ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.00 ML
575	23 AUG 1955	15:32:40.0	43.500N	128.000W			6.25N'					NO	ORIGINAL DATA SOURCE = CGS MAGNITUDE(FRACTIONAL NOTATION,AVE)=6.25, AUTHORITY-PAS
576	10 SEP 1955	16:52:45LT	48.400N	124.600W		V					W	NO	REPORTED FELT INFORMATION ORIGINAL DATA SOURCE = USE PARAMETERS OF EPICENTER FROM UNIV. WASHINGTON, SEATTLE
577	3 OCT 1955	11:24:08.0	49.000N	127.000W			3.50ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.50 ML
578	27 OCT 1955	18:09:37.0	48.150N	124.430W			3.00ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.00 ML
579	3 NOV 1955	01:40:26.1	48.100N	121.700W		V						R	
580	21 NOV 1955	22:19:52.0	48.500N	122.420W			3.00ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.00 ML
581	6 DEC 1955	03:21:51.0	50.300N	123.600W			3.60ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.60 ML
582	12 DEC 1955	19:41:20.0	43.500N	127.500W			4.20ML					CA	ORIGINAL DATA SOURCE = EPB
583	15 DEC 1955	06:52:05.0	47.600N	123.800W			3.00ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.00 ML
584	7 JAN 1956	04:28:38.0	47.570N	122.430W			3.50ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.50 ML
585	10 JAN 1956	12:32:15.0	43.500N	127.000W			4.90ML					CA	ORIGINAL DATA SOURCE = EPB
586	9 FEB 1956	00:57:14.0	48.700N	123.170W			3.10ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.10 ML
587	24 FEB 1956	22:00:00.0	47.900N	119.100W	W2	V						R	ELECTRIC CITY
588	8 APR 1956	22:28:13.0	48.530N	123.070W			3.30ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.30 ML
589	26 APR 1956	16:48:21.7	47.600N	122.300W		III						R	SEATTLE, WASH.

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CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG	SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
590	27 APR 1956	16:16:41.0	49.300N	124.000W			3.00ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.00 ML
591	14 MAY 1956	17:04:24.0	50.600N	117.500W			3.80ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.80 ML
592	18 MAY 1956	03:41:52.0	45.000N	124.000W			3.70ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.70 ML
593	6 JUL 1956	02:22:00.0	42.500N	126.000W			5.00N'					NO	ORIGINAL DATA SOURCE = CGS MAGNITUDE(FRACTIONAL NOTATION,AVE)=5.00, AUTHORITY-BRK
594	6 JUL 1956	08:13:10.0	42.300N	126.500W			3.50ML					CA	ORIGINAL DATA SOURCE = EPB
595	8 JUL 1956	02:01:29.0	42.200N	126.370W			3.90ML					CA	ORIGINAL DATA SOURCE = EPB
596	15 JUL 1956	01:55:09.0	44.000N	127.500W			4.70ML					CA	ORIGINAL DATA SOURCE = EPB
597	7 AUG 1956	04:05:52.0	44.500N	115.000W			4.10ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 4.10 ML
598	12 AUG 1956	21:22:30.0	47.900N	127.500W			3.40ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.40 ML
599	18 AUG 1956	00:52:16.0	44.000N	115.500W			4.40ML					CA	ORIGINAL DATA SOURCE = EPB
600	1 SEP 1956	19:34:06.0	45.000N	128.000W			4.00ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 4.00 ML
601	17 SEP 1956	01:07:30.0	45.000N	128.000W			4.40ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 4.40 ML
602	4 OCT 1956	07:30:27.0	50.800N	119.700W			3.30ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.30 ML
603	8 OCT 1956	01:49:36.0	48.400N	126.600W			3.00ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.00 ML
604	18 OCT 1956	07:15:27.0	42.500N	126.200W			4.20ML					CA	ORIGINAL DATA SOURCE = EPB
605	19 OCT 1956	23:58:30.0	42.500N	127.000W			4.70ML					CA	ORIGINAL DATA SOURCE = EPB
606	10 NOV 1956	18:09:18.0	42.500N	126.600W			3.00ML					CA	ORIGINAL DATA SOURCE = EPB
607	23 NOV 1956	02:51:40.0	42.800N	126.400W			3.20ML					CA	ORIGINAL DATA SOURCE = EPB
608	15 DEC 1956	09:50:00.0	46.145N	122.912W	W	IV						R	KELSO
609	26 JAN 1957	01:16:07.4	48.290N	122.600W			5.00ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.50 ML

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG	SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
610	11 FEB 1957	17:04:57.0	47.520N	121.770W			4.00ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 4.00 ML
611	14 MAR 1957	11:15:54.0	48.850N	122.470W			3.10ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.10 ML
612	16 MAR 1957	00:37:04.0	49.800N	124.350W			3.70ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.70 ML
613	23 MAR 1957	00:00:00.0	44.382N	123.596W	W	III						BB	ALSEA, OREG
614	31 MAR 1957	02:23:05.0	43.500N	127.500W			4.00ML					CA	ORIGINAL DATA SOURCE = EPB
615	13 APR 1957	02:36:40.0	48.000N	128.000W			3.60ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.60 ML
616	13 APR 1957	03:44:07.0	48.300N	128.000W			4.00ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 4.00 ML
617	4 MAY 1957	21:09:25.0	47.350N	122.383W		V						W	NO REPORTED FELT INFORMATION ORIGINAL DATA SOURCE = USE PARAMETERS OF EPICENTER FROM UNIV. WASHINGTON, SEATTLE
618	11 MAY 1957	00:26:21.0	49.200N	115.800W			3.20ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.20 ML
619	14 MAY 1957	10:43:31.0	47.000N	115.500W			3.40ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.40 ML
620	17 MAY 1957	10:41:LT	46.000N	114.000W	W2	V						EH	SOUTHWESTERN MONTANA.
621	19 MAY 1957	19:48:23.0	52.100N	127.700W			3.10ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.10 ML
622	7 JUL 1957	17:23:00.0	47.497N	121.785W	W	IV						R	NORTH BEND
623	5 AUG 1957	12:05:43.0	44.500N	128.000W			3.90ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.90 ML
624	13 AUG 1957	14:36:15.0	43.000N	125.000W			4.20ML					CA	ORIGINAL DATA SOURCE = EPB
625	14 SEP 1957	03:20:53.0	48.700N	123.950W			3.40ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.40 ML
626	17 SEP 1957	06:37:13.0	50.900N	125.100W			3.30ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.30 ML
627	3 OCT 1957	19:03:55.0	47.500N	127.000W			3.00ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.00 ML
628	29 OCT 1957	15:30:00.0	46.870N	122.268W	W	IV						R	EATONVILLE

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CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG	SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
629	1 NOV 1957	10:12:02.0	46.700N	121.500W			4.20ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 4.20 ML
630	1 NOV 1957	10:32:27.0	47.500N	120.600W			3.30ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.30 ML
631	1 NOV 1957	11:05:33.0	46.400N	122.300W			3.20ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.20 ML
632	16 NOV 1957	22:00:00.0	45.300N	123.800W			5.00ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 5.00 ML
633	17 NOV 1957	06:00:29.0	45.300N	123.800W			4.00ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 4.00 ML
634	17 NOV 1957	06:01:34.0	45.800N	124.200W			3.60ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.60 ML
635	29 NOV 1957	04:47:00.0	45.535N	122.620W	W	III						R	PORTLAND, ORE.
636	1 DEC 1957	21:31:17.0	47.300N	128.000W			3.30ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.30 ML
637	3 DEC 1957	13:47:56.0	51.600N	123.300W			3.30ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.30 ML
638	16 DEC 1957	17:27:47.0	50.000N	127.000W			6.00ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 6.00 ML
639	18 DEC 1957	23:25:00.0	47.500N	116.000W			5.00ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 5.00 ML
640	6 JAN 1958	00:00:00.0	46.750N	121.810W	W	IV						R	LONGMIRE
641	22 JAN 1958	12:59:31.0	44.500N	124.200W			3.00ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.00 ML
642	24 FEB 1958	14:51:61.4	47.690N	114.155W		IV						UE	POLSON, MONT.
643	3 MAR 1958	19:34:42.0	49.570N	123.720W			3.00ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.00 ML
644	12 MAR 1958	12:09:19.0	42.000N	119.500W			4.50ML					CA	ORIGINAL DATA SOURCE = EPB
645	13 MAR 1958	23:38:59.0	49.100N	122.200W			3.00ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.00 ML
646	18 MAR 1958	13:30:46.0	49.000N	122.400W			3.10ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.10 ML
647	6 APR 1958	05:56:49.0	44.000N	126.000W			4.00ML					CA	ORIGINAL DATA SOURCE = EPB

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG	SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
648	12 APR 1958	00:00:00.0	47.900N	119.100W	W2	IV						R	ELECTRIC CITY, TIME, 01: OR 02:
649	12 APR 1958	22:37:11.0	48.000N	120.000W			4.10ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 4.10 ML
650	7 MAY 1958	11:03:28.0	48.630N	122.530W			3.30ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.30 ML
651	7 MAY 1958	17:28:01.0	45.100N	122.000W			3.40ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.40 ML
652	22 MAY 1958	20:13:01.0	48.020N	121.600W			4.20ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 4.20 ML
653	22 MAY 1958	21:55:37.0	48.680N	121.630W			3.00ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.00 ML
654	22 MAY 1958	22:14:38.0	48.720N	122.020W			3.00ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.00 ML
655	23 MAY 1958	06:49:47.0	44.500N	116.000W		IV						UE	W IDAHO LIGHT SHOCK FELT BY A NUMBER OF PERSONS IN BOISE
656	31 MAY 1958	21:34:16.0	47.300N	127.000W			3.10ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.10 ML
657	19 JUN 1958	11:52:46.0	44.500N	128.000W			4.20ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 4.20 ML
658	10 JUL 1958	04:23:20.0	48.800N	122.400W			3.00ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.00 ML
659	10 JUL 1958	19:04:18.0	47.330N	125.520W			3.00ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.00 ML
660	13 JUL 1958	01:41:52.0	47.800N	122.300W			3.10ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.10 ML
661	6 AUG 1958	04:24:41.0	49.500N	127.700W			3.30ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.30 ML
662	19 SEP 1958	02:18:36.0	47.900N	122.700W			3.10ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.10 ML
663	22 SEP 1958	07:35:00.0	46.760N	122.030W	W	IV						R	ASHFORD
664	29 SEP 1958	08:53:37.0	42.300N	118.100W			4.00ML					CA	ORIGINAL DATA SOURCE = EPB
665	3 OCT 1958	00:08:50.0	47.600N	124.500W			3.00ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.00 ML

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CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG	SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
666	7 OCT 1958	05:07:56.0	47.400N	124.000W			3.30ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.30 ML
667	7 OCT 1958	16:09:41.0	44.000N	127.500W			4.70ML					CA	ORIGINAL DATA SOURCE = EPB
668	27 OCT 1958	07:39:45.0	47.192N	114.888W		IV						UE	SUPERIOR, MONT. (STRONGLY FELT, PEOPLE AWAKENED) LOUD \WHISHING\ SOUND HEARD
669	18 NOV 1958	22:15:00.0	45.500N	122.430W	W	III						BB	GRESHAM, OREG; SHOCK PROBABLY CAUSED BY JET PLANES.
670	25 DEC 1958	17:58:28.0	51.100N	124.600W			3.20ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.20 ML
671	15 JAN 1959	19:16:24.3	49.850N	127.590W			4.20ML		8	-	D	TS	STD ERROR 1.37 SEC; 10 STATIONS USED IN LOCATION.
672	18 JAN 1959	17:15:03.0	44.000N	127.500W			4.80ML					CA	ORIGINAL DATA SOURCE = EPB
673	21 JAN 1959	07:15:00.0	46.070N	118.328W	W	IV						R	WALLA WALLA
674	6 FEB 1959	13:42:05.0	48.000N	128.000W			3.70ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.70 ML
675	20 FEB 1959	00:53:55.0	42.700N	125.800W			3.40ML					CA	ORIGINAL DATA SOURCE = EPB
676	27 FEB 1959	06:13:54.0	43.700N	127.700W			3.90ML					CA	ORIGINAL DATA SOURCE = EPB
677	6 MAR 1959	19:47:00.0	45.000N	128.000W			4.00ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 4.00 ML
678	17 MAR 1959	16:19:19.0	43.000N	127.500W			4.20ML					CA	ORIGINAL DATA SOURCE = EPB
679	20 MAR 1959	15:41:58.0	45.000N	126.000W			3.70ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.70 ML
680	21 MAR 1959	20:38:55.0	48.600N	122.700W			3.20ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.20 ML
681	10 MAY 1959	01:05:32.0	50.400N	115.100W			3.00ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.00 ML
682	2 JUN 1959	18:49:00.0	43.700N	119.700W			4.70ML					CA	ORIGINAL DATA SOURCE = EPB
683	12 JUN 1959	08:21:03.0	48.700N	127.200W			3.10ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.10 ML
684	4 JUL 1959	05:27:22.0	47.900N	123.080W			3.00ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.00 ML
685	11 JUL 1959	15: LT	47.600N	119.300W	W	IV						WG	DEEP LAKE, WASH. TIME REPORTED BY USE

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CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG	SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
686	18 JUL 1959	12:19:05.0	49.500N	127.000W			3.10ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.10 ML
687	23 JUL 1959	08:15:12.0	44.500N	124.500W			4.30ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 4.30 ML
688	2 AUG 1959	09:35:52.0	47.800N	126.400W			3.00ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.00 ML
689	4 AUG 1959	23:53:30.0	45.680N	122.270W			4.70ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 4.70 ML
690	6 AUG 1959	03:44:32.0	47.800N	119.900W			4.40ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 4.40 ML
691	6 AUG 1959	04:36:10.0	47.800N	119.900W			3.90ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.90 ML
692	8 AUG 1959	19:06:59.0	43.500N	126.500W			4.80ML					CA	ORIGINAL DATA SOURCE = EPB
693	18 AUG 1959	05:13:30.0	42.000N	127.000W			4.30ML					CA	ORIGINAL DATA SOURCE = EPB
694	21 AUG 1959	00:28:17.0	44.800N	124.700W			4.60ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 4.60 ML
695	23 AUG 1959	23:11:15.0	48.400N	122.500W			3.10ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.10 ML
696	4 SEP 1959	20:57:35.0	48.770N	123.300W			3.40ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.40 ML
697	26 SEP 1959	04:48:53.0	44.000N	128.000W			4.00ML					CA	ORIGINAL DATA SOURCE = EPB
698	28 SEP 1959	01:50:27.0	42.000N	127.000W			4.10ML					CA	ORIGINAL DATA SOURCE = EPB.
699	4 OCT 1959	21:40:50.0	47.700N	123.000W			3.30ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.30 ML
700	9 OCT 1959	22:55:02.0	42.600N	119.000W			4.40ML					CA	ORIGINAL DATA SOURCE = EPB
701	13 OCT 1959	07:30:29.0	43.000N	119.000W			4.00ML					CA	ORIGINAL DATA SOURCE = EPB
702	14 OCT 1959	14:34:49.0	42.200N	118.400W			3.90ML					CA	ORIGINAL DATA SOURCE = EPB
703	14 OCT 1959	21:35:37.0	47.950N	121.770W			3.90ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.90 ML
704	27 OCT 1959	06:12:17.0	42.500N	127.000W			5.13N'					NO	ORIGINAL DATA SOURCE = CGS MAGNITUDE(FRACTIONAL NOTATION,AVE)=5.13, AUTHORITY-BRK
705	31 OCT 1959	19:22:24.0	44.000N	125.000W			4.00ML					CA	ORIGINAL DATA SOURCE = EPB

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CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
706	31 OCT 1959	20:51:13.0	49.450N	126.880W			3.20ML				CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.20 ML
707	3 NOV 1959	10:03:LT	44.500N	115.500W	W1	VI					EH	DUCK CREEK, (HEGBEN LAKE), MONT
708	9 NOV 1959	21:10:00.0	45.353N	119.550W	W	IV					BD	HEPPNER, OREG
709	18 NOV 1959	23:48:32.0	48.400N	122.600W			3.40ML				CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.40 ML
710	19 NOV 1959	23:53:49.0	42.500N	126.500W			5.10ML				CA	ORIGINAL DATA SOURCE = EPB
711	23 NOV 1959	18:15:25.0	46.670N	121.750W			4.80ML				CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 4.80 ML
712	24 NOV 1959	06:15:45.0	46.550N	121.470W			3.10ML				CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.10 ML
713	12 DEC 1959	06:25:33.0	48.700N	123.100W			3.10ML				CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.10 ML
714	12 DEC 1959	06:51:30.0	48.700N	123.100W			3.30ML				CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.30 ML
715	26 DEC 1959	17:44:47.0	42.700N	119.300W			3.70ML				CA	ORIGINAL DATA SOURCE = EPB
716	29 DEC 1959	12:07:15.0	52.300N	127.800W			3.80ML				CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.80 ML
717	29 DEC 1959	12:47:21.0	52.100N	127.700W			3.60ML				CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.60 ML
718	7 JAN 1960	09:16:04.0	46.930N	122.500W			3.60ML				CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.60 ML
719	16 JAN 1960	07:31:01.0	46.750N	121.780W			3.50ML				CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.50 ML
720	19 JAN 1960	09:00:53.0	51.100N	124.480W			3.30ML				CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.30 ML
721	24 JAN 1960	00:39:33.0	43.500N	127.500W			4.50N'				NO	ORIGINAL DATA SOURCE = CGS MAGNITUDE(FRACTIONAL NOTATION,AVE)=4.50, AUTHORITY-BRK
722	5 MAR 1960	LT	45.633N	122.667W	W	IV	3.50				WG	VANCOUVER, WASHINGTON TIME REPORTED AS LT
723	11 APR 1960	06:47:34.0	47.570N	122.250W			3.30ML				CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.30 ML
724	11 MAY 1960	03:05:00.0	46.800N	121.900W	W	III					R	SOUTHWEST MT. RAINIER, SEVEN MILES WEST OF LONGMIRE.

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
725	14 MAY 1960	12:56:22.0	48.400N	125.400W			3.00ML				CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.00 ML
726	14 JUN 1960	10:30:00.0	46.750N	121.810W	W	III					R	LONGMIRE
727	16 JUN 1960	10:32:45.0	46.750N	121.810W	W	IV					R	LONGMIRE
728	5 SEP 1960	14:31:55.0	47.700N	121.600W			3.00ML				CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.00 ML
729	10 SEP 1960	15:06:34.0	47.500N	122.700W			4.90ML				CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 4.90 ML
730	11 OCT 1960	11:55:00.0	46.000N	122.200W		IV					R	
731	1 NOV 1960	08:37:23.0	47.100N	126.400W			3.00ML				CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.00 ML
732	8 NOV 1960	11:39:00.0	45.000N	128.000W	W2	V	5.50				BD	NEWPORT, 200 MILES OFF OREG-WASH COAST. EPICENTER AT SEA.
733	22 DEC 1960	11:41:06.0	43.300N	126.200W			4.10ML	51			CA	ORIGINAL DATA SOURCE = EPB
734	27 DEC 1960	11:27:08.0	42.600N	123.700W			3.30ML				CA	ORIGINAL DATA SOURCE = EPB
735	3 JAN 1961	15:55:00.0	46.000N	122.100W		IV					R	
736	4 JAN 1961	01:47:00.0	46.000N	122.083W		IV		33		M	NO	REPORTED FELT INFORMATION HYPOCENTER DEPTH ASSIGNED SOLUTION BASED ON MACRO-SEISMIC (FELT) INFORMATION ORIGINAL DATA SOURCE = SEA
737	4 JAN 1961	07:26:01.0	46.000N	122.083W		V		33		W	NO	REPORTED FELT INFORMATION HYPOCENTER DEPTH ASSIGNED ORIGINAL DATA SOURCE = SEA PARAMETERS OF EPICENTER FROM UNIV. WASHINGTON, SEATTLE
738	4 JAN 1961	07:26:04.0	50.920N	124.870W			3.30ML				CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.30 ML
739	17 JAN 1961	06:50:42.0	44.832N	116.438W		III					UE	WEST YELLOWSTONE, MONT.
740	17 JAN 1961	11:27:50.0	51.800N	125.500W			3.20ML				CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.20 ML
741	2 FEB 1961	05:50:16.0	46.800N	121.500W			3.10ML				CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.10 ML
742	6 FEB 1961	05:19:23.0	47.500N	126.900W			3.30ML				CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.30 ML

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
743	22 APR 1961	16:03:55.0	49.000N	119.700W			3.30ML				CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.30 ML
744	22 MAY 1961	01:57:51.4	47.600N	120.200W	W	IV					R	
745	26 MAY 1961	05:51:00.0	46.053N	122.300W	W	IV					R	COUGAR
746	2 JUN 1961	04:05:00.0	46.053N	122.300W	W	III					R	COUGAR
747	6 JUN 1961	03:46:08.6	43.600N	127.700W			4.60N'	25			NO	HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) ORIGINAL DATA SOURCE = CGS LOCAL MAGNITUDE = 4.60 SCALE =ML AUTHORITY= BRK
748	28 JUN 1961	10:22:52.9	47.537N	120.293W	W	IV					R	ROCKY REACH DAM
749	25 JUL 1961	02:33:21.0	49.600N	114.400W			3.20ML				CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.20 ML
750	28 JUL 1961	14:52:44.0	46.000N	122.100W		IV					R	
751	19 AUG 1961	04:56:24.1	44.700N	122.500W		VI	4.50N'	33			NO	REPORTED DAMAGE HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) ORIGINAL DATA SOURCE = CGS MAGNITUDE(FRACTIONAL NOTATION,AVE)=4.50, AUTHORITY-PAS
752	23 AUG 1961	17:59:47.0	42.400N	123.200W			4.60N'	10		B	NO	HYPOCENTER DEPTH ASSIGNED HYPOCENTER/EPICENTER DETERMINED BY BERKELEY QUALIT D ORIGINAL DATA SOURCE = BRK LOCAL MAGNITUDE = 4.60 SCALE =ML AUTHORITY= BRK
753	16 SEP 1961	03:24:58.0	46.000N	122.200W			4.30ML				CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 4.30 ML
754	17 SEP 1961	15:56:00.0	46.000N	122.200W			5.00ML				CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 5.00 ML
755	19 OCT 1961	20:37:49.0	47.500N	122.900W			3.00ML				CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.00 ML
756	29 OCT 1961	14:00:12.0	49.400N	127.600W			3.20ML				CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.20 ML
757	30 OCT 1961	02:16:32.7	42.300N	126.700W			5.13N'	36			NO	ORIGINAL DATA SOURCE = CGS MAGNITUDE(FRACTIONAL NOTATION,AVE)=5.13, AUTHORITY-PAL
758	31 OCT 1961	02:35:00.0	48.400N	120.000W			4.30ML				CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 4.30 ML
759	31 OCT 1961	03:34:29.8	48.400N	120.000W		V					R	FELT OVER 1,200 SQ. MI.

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CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG SM	H (KM)	DIS (KM)	Q S	LOCATION AND COMMENTS
760	7 NOV 1961	01:29:00.0	45.700N	122.900W			5.00ML			CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 5.00 ML
761	7 NOV 1961	21:30:00.0	45.500N	122.600W			4.30ML			CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 4.30 ML
762	29 NOV 1961	11:35:00.0	45.550N	122.600W	W	IV				BD	PORTLAND, OREG
763	30 NOV 1961	08:12:50.0	47.200N	122.100W			3.10ML			CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.10 ML
764	15 DEC 1961	11:35:00.0	45.757N	122.878W	W	III				R	SCAPPOSE, ORE. ALSO SPELLED SCAPPOOSE.
765	18 DEC 1961	07:15:58.0	48.700N	128.000W			3.00ML			CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.00 ML
766	15 JAN 1962	05:29:00.0	47.800N	120.200W			4.30ML			CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 4.30 ML
767	17 JAN 1962	19:27:26.0	48.550N	124.970W			3.30ML			CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.30 ML
768	29 JAN 1962	21:49:24.0	49.030N	124.620W			3.50ML			CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.50 ML
769	4 MAR 1962	22:58:32.0	49.250N	115.200W			3.20ML			CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.20 ML
770	19 JUN 1962	01:58:14.0	49.000N	127.600W			3.10ML			CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.10 ML
771	16 JUL 1962	14:00:00.0	47.045N	122.890W	W	IV				R	OLYMPIA
772	26 JUL 1962	16:44:34.0	49.400N	127.000W			3.50ML			CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.50 ML
773	11 AUG 1962	16:53:00.0	46.000N	123.500W		VI				R	
774	28 AUG 1962	19:19:59.0	51.700N	121.900W			4.30ML			CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 4.30 ML
775	12 SEP 1962	23:13:00.0	46.100N	122.200W	W	III				R	SIX MILES EAST OF COUGER
776	18 OCT 1962	18:03:18.5	44.300N	115.300W		III		33			NO REPORTED FELT INFORMATION 005 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
777	19 OCT 1962	03:45:00.0	44.215N	114.940W		III				UE	FELT STANLEY, IDAHO FAINT EARTH NOISES
778	19 OCT 1962	10:43:25.0	44.600N	115.600W		III		33			NO REPORTED FELT INFORMATION 005 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
												ORIGINAL DATA SOURCE = CGS
779	3 NOV 1962	17:42:00.0	46.053N	122.300W	W	IV					R	COUGAR
780	6 NOV 1962	03:36:46.9	45.800N	122.500W		VI	4.75N'	44			NO	REPORTED DAMAGE 052 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS ISOSEISMAL MAP PUBLISHED BY USE MAGNITUDE(FRACTIONAL NOTATION,AVE)=4.75, AUTHORITY-BRK
781	9 NOV 1962	13:53:00.0	46.100N	122.200W	W	IV					R	SWIFT DAM, EPICENTER FIVE AND ONE HALF MILES EAST OF COUGAR.
782	9 NOV 1962	14:12:00.0	46.100N	122.200W	W	IV					R	SWIFT DAM, EPICENTER FIVE AND ONE HALF MILES EAST OF COUGAR.
783	18 DEC 1962	06:49:LT	47.000N	114.000W	W2	V					EH	NORTHWESTERN MONTANA.
784	18 DEC 1962	06:50:LT	47.000N	114.000W	W2	V					EH	NORTHWESTERN MONTANA.
785	18 DEC 1962	06:52:LT	47.000N	114.000W	W2	V					EH	NORTHWESTERN MONTANA.
786	31 DEC 1962	20:49:35.0	47.000N	122.000W			5.00ML				CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 5.00 ML
787	24 JAN 1963	21:43:00.0	47.400N	122.100W			5.00ML				CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 5.00 ML
788	25 JAN 1963	06:35:00.0	46.835N	122.318W	W	III					R	LA GRANDE
789	27 JAN 1963	08:25:00.0	44.400N	114.600W			5.00ML				CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 5.00 ML LOCALTIME.
790	1 FEB 1963	09:39:00.0	44.300N	114.500W			4.30ML				CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 4.30 ML LOCALTIME.
791	5 FEB 1963	19:30:00.0	44.260N	114.398W		IV					UE	FELT CLAYTON, IDAHO
792	2 MAR 1963	16:30:00.0	45.535N	122.620W	W	IV					R	PORTLAND, ORE.
793	7 MAR 1963	23:53:25.0	44.900N	123.500W		V	4.60MB	33			NO	REPORTED FELT INFORMATION 034 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
794	5 APR 1963	09:27:16.0	49.600N	126.500W			3.00ML				CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.00 ML
795	24 JUN 1963	18:14:16.0	49.600N	127.080W			3.20ML				CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.20 ML

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CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG SM	H (KM)	DIS (KM)	Q S	LOCATION AND COMMENTS
796	2 JUL 1963	12:34:34.0	42.900N	126.200W			4.10MB	33		NO	005 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
797	4 JUL 1963	05:50:49.5	43.700N	126.400W			4.40MB	33		NO	005 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
798	13 JUL 1963	03:16:53.0	49.750N	124.000W			3.10ML			CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.10 ML
799	2 AUG 1963	09:45:41.9	43.400N	114.500W		IV		50		NO	REPORTED FELT INFORMATION 006 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
800	3 AUG 1963	01:23:16.7	44.900N	115.400W			4.00MB	33		NO	005 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
801	18 AUG 1963	00:24:26.0	47.500N	122.600W			3.20ML			CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.20 ML
802	22 AUG 1963	09:27:09.3	42.000N	126.200W			5.60MB	33		NO	021 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
803	26 AUG 1963	09:20:43.0	48.000N	123.000W			3.10ML			CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.10 ML
804	6 SEP 1963	22:19:35.2	44.300N	114.700W			4.10MB	33		NO	005 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
805	9 SEP 1963	10:45:17.4	44.400N	114.700W		V	4.10MB	15		NO	REPORTED FELT INFORMATION 006 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
806	11 SEP 1963	02:08:44.8	44.300N	114.700W		VI	4.90MB	15		NO	REPORTED DAMAGE 059 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
807	11 SEP 1963	02:31:39.9	44.300N	114.700W			4.20MB	15		NO	REPORTED FELT INFORMATION 009 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
808	12 SEP 1963	06:23:50.6	44.300N	114.700W		IV	4.40MB	15		NO	REPORTED FELT INFORMATION 037 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
809	12 SEP 1963	06:53:00.9	44.200N	114.500W			4.10MB	33		NO	005 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
810	12 SEP 1963	09:01:07.0	44.400N	114.800W			3.60MB	15		NO	REPORTED FELT INFORMATION 007 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS

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CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
811	14 SEP 1963	15:58:02.1	44.300N	114.800W		V	4.30MB	15			NO	REPORTED DAMAGE 027 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
812	14 SEP 1963	16:06:49.3	44.300N	114.700W			3.90MB	33			NO	006 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
813	14 SEP 1963	16:39:41.7	44.400N	114.700W			4.00MB	15			NO	013 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
814	14 SEP 1963	16:55:40.6	44.300N	114.600W			3.90MB	15			NO	008 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
815	14 SEP 1963	18:48:56.4	44.300N	114.800W			3.80MB	15			NO	REPORTED FELT INFORMATION 011 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
816	16 SEP 1963	12:06:14.0	44.300N	114.700W		V	4.20MB	15			NO	REPORTED FELT INFORMATION 016 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
817	16 SEP 1963	17:15:34.5	43.200N	126.800W			4.70MB	33			NO	009 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
818	21 SEP 1963	12:29:25.8	43.700N	114.700W			3.50MB	33			NO	005 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
819	22 SEP 1963	22:36:23.6	42.000N	126.500W			4.30MB	33			NO	007 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
820	3 OCT 1963	07:10:00.0	44.260N	114.398W		IV					UE	FELT CLAYTON, IDAHO
821	5 OCT 1963	04:22:54.1	43.700N	127.100W			4.20MB	16			NO	011 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
822	7 OCT 1963	21:30:30.0	44.800N	114.400W		IV	3.50MB	33			NO	REPORTED FELT INFORMATION 006 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
823	10 OCT 1963	03:15:15.0	47.600N	127.100W			3.90ML				CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.90 ML
824	15 OCT 1963	15:15:10.6	44.300N	114.800W		IV	3.90MB	33			NO	REPORTED FELT INFORMATION 009 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
825	24 OCT 1963	09:52:37.4	44.400N	114.800W			3.80MB	33			NO	005 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
826	29 OCT 1963	14:04:22.1	44.500N	127.700W			3.80MB	33			NO	005 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
827	28 NOV 1963	03:14:02.4	44.300N	114.800W			3.50MB	33			NO	005 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
828	28 NOV 1963	11:14:18.6	47.720N	120.500W			3.20MS				SD	
829	18 DEC 1963	10:06:51.0	43.700N	126.900W			4.20MB	33			NO	007 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
830	22 DEC 1963	02:50:29.8	44.400N	114.600W			4.40MB	33			NO	006 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
831	22 DEC 1963	02:54:04.9	48.590N	119.760W		V	4.40MB	33			NO	REPORTED FELT INFORMATION 008 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
832	22 DEC 1963	05:44:37.9	44.200N	114.500W			4.10ML	33			CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 4.10 ML
833	23 DEC 1963	00:15:01.4	44.400N	114.800W			5.10ML	33			CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 5.10 ML
834	23 DEC 1963	00:28:59.1	44.200N	114.400W			3.80ML	33			CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.80 ML
835	25 DEC 1963	20:04:10.7	44.200N	114.600W			3.70ML	33			CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.70 ML
836	27 DEC 1963	02:36:21.6	45.700N	123.400W		VI	4.50MB	33			NO	REPORTED FELT INFORMATION 028 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
837	1 JAN 1964	04:22:13.4	43.700N	126.300W			3.70MB	33			NO	006 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
838	8 JAN 1964	18:46:50.4	44.100N	127.500W			4.20MB	33			NO	005 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
839	23 JAN 1964	03:04:49.7	44.400N	114.500W			4.10MB	33			NO	005 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
840	26 JAN 1964	21:41:00.0	46.100N	122.400W			4.30ML				CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 4.30 ML
841	28 JAN 1964	04:56:48.6	43.300N	125.900W			4.50MB	17			NO	006 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
842	31 JAN 1964	17:07:43.1	51.300N	124.700W			4.20MB	14			NO	008 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
843	12 FEB 1964	16:14:30.7	43.300N	126.000W			4.10MB	33			NO	007 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG SM	H (KM)	DIS (KM)	Q S	LOCATION AND COMMENTS
844	14 FEB 1964	12:07:22.1	43.600N	126.000W			4.50MB	33		NO	011 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
845	20 MAR 1964	05:20:00.0	47.700N	114.200W			4.30ML			CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 4.30 ML LOCALTIME.
846	29 MAR 1964	10:59:37.0	52.000N	119.000W			3.20ML			CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.20 ML
847	31 MAR 1964	02:11:07.1	43.600N	126.600W			4.50MB	33		NO	014 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
848	9 APR 1964	00:46:46.0	49.100N	127.500W			4.10ML			CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 4.10 ML
849	16 APR 1964	LT	46.800N	121.800W	W	IV				WG	MT. RAINIER PARK, WASH. TIME REPORTED AS LT
850	17 APR 1964	06:53:43.6	44.100N	114.300W		IV	3.60MB	33		NO	REPORTED FELT INFORMATION 005 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
851	21 APR 1964	12:11:32.9	44.200N	114.300W			3.60MB	33		NO	006 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
852	23 APR 1964	08:27:01.6	43.300N	126.500W			4.30MB	33		NO	008 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
853	26 APR 1964	01:42:49.0	48.700N	120.500W			3.30ML			CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.30 ML
854	8 MAY 1964	10:04:16.4	43.400N	126.600W			4.30MB	33		NO	010 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
855	13 MAY 1964	13:46:15.3	48.063N	114.073W		IV				UE	BIG FORK, MONT. AWAKENED FEW, EARTH NOISE
856	26 JUN 1964	12:24:28.5	48.200N	115.100W		IV	4.70MB	33		NO	REPORTED FELT INFORMATION 010 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
857	2 JUL 1964	17:02:34.3	47.400N	127.900W			3.80MB	33		NO	005 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
858	4 JUL 1964	13:41:29.5	43.600N	126.700W			4.70MB	33		NO	005 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
859	7 JUL 1964	13:44:40.3	43.400N	127.200W			5.70MB	7		NO	017 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
860	13 JUL 1964	11:54:50.7	42.500N	126.700W			5.60MB	33			NO	033 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
861	14 JUL 1964	15:50:08.7	48.840N	122.600W		VI	5.00N'	33			NO	REPORTED DAMAGE MORE ACCURATE SOLUTION BASED ON DETAILED LOCAL DATA ORIGINAL DATA SOURCE = USE ISOSEISMAL MAP PUBLISHED BY USE LOCAL MAGNITUDE = 5.00 SCALE =ML AUTHORITY= SEA
862	27 JUL 1964	18:40:53.4	42.400N	125.300W			4.50MB	33			NO	007 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
863	30 JUL 1964	12:45:15.4	49.200N	122.300W		V	4.30				R	FELT OVER 3,000 SQ. MI.
864	30 JUL 1964	15:32:21.0	48.700N	122.800W			3.00ML				CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.00 ML
865	2 AUG 1964	22:26:32.0	49.400N	116.600W			3.10ML				CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.10 ML
866	6 AUG 1964	10:46:28.9	43.400N	126.700W			5.30MB	33			NO	014 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
867	13 AUG 1964	06:35:37.0	42.200N	126.100W			4.90MB	33			NO	020 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
868	13 AUG 1964	08:50:46.0	42.300N	125.500W			4.90MB	33			NO	010 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
869	3 SEP 1964	11:48:36.1	43.500N	127.100W			4.40MB	33			NO	013 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
870	8 SEP 1964	00:27:55.5	44.300N	114.800W			3.90MB	33			NO	006 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
871	22 SEP 1964	06:52:10.0	44.400N	114.800W			4.30MB	15			NO	006 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
872	24 SEP 1964	13:59:36.8	43.500N	127.500W			6.10MB	14			NO	032 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
873	28 SEP 1964	15:43:13.6	43.500N	127.100W			4.80MB	33			NO	021 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
874	1 OCT 1964	11:00:48.3	43.500N	126.900W			6.00MB	33			NO	017 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
875	1 OCT 1964	12:31:24.6	45.700N	122.800W		V	5.30MB	33			NO	REPORTED FELT INFORMATION 010 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
876	7 OCT 1964	17:26:25.2	43.500N	126.000W			4.50MB	23				NO 005 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
877	8 OCT 1964	14:12:53.9	43.900N	127.400W			3.90MB	33				NO 005 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
878	9 OCT 1964	02:26:02.4	47.800N	114.200W		V	4.60MB	33				NO REPORTED FELT INFORMATION 007 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
879	12 OCT 1964	04:31:00.0	45.700N	122.800W			4.30ML					CA ORIGINAL DATA SOURCE = EPB MAGNITUDE = 4.30 ML
880	14 OCT 1964	06:33:00.0	47.700N	122.100W			4.30ML					CA ORIGINAL DATA SOURCE = EPB MAGNITUDE = 4.30 ML
881	14 OCT 1964	16:03:53.6	47.900N	114.300W			4.60MB	33				NO REPORTED FELT INFORMATION 007 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
882	15 OCT 1964	14:32:37.5	47.700N	122.100W		V	4.10MB	33				NO REPORTED FELT INFORMATION 006 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
883	17 OCT 1964	12:34:17.9	47.600N	122.100W		III	3.40					R
884	18 OCT 1964	12:02:34.0	47.900N	121.900W		IV	3.50					R
885	6 NOV 1964	12:14:29.8	43.500N	126.600W			4.60MB	33				NO 014 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
886	18 NOV 1964	10:26:50.0	44.100N	114.100W			3.60MB	33				NO 006 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
887	11 DEC 1964	13:11:12.0	49.200N	128.000W			3.70ML					CA ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.70 ML
888	12 DEC 1964	04:19:07.0	48.500N	126.000W			3.30ML					CA ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.30 ML
889	15 DEC 1964	19:41:21.0	49.800N	127.800W			3.50ML					CA ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.50 ML
890	6 JAN 1965	03:26:00.0	47.700N	114.200W			4.30ML					CA ORIGINAL DATA SOURCE = EPB MAGNITUDE = 4.30 ML LOCALTIME.
891	9 JAN 1965	11:56:34.0	49.300N	121.250W			3.20ML					CA ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.20 ML

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG SM	H (KM)	DIS (KM)	Q S	LOCATION AND COMMENTS
892	9 JAN 1965	14:58:43.0	49.300N	121.250W			3.10ML			CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.10 ML
893	1 MAR 1965	10:24:12.4	44.000N	127.400W			4.10MB	33		NO	008 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
894	8 MAR 1965	19:30:50.0	52.600N	115.400W			3.00ML			CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.00 ML
895	10 MAR 1965	20:09:15.2	43.400N	125.400W			4.00MB	33		NO	006 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
896	23 MAR 1965	00:28:18.0	49.700N	117.400W			4.00ML			CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 4.00 ML
897	24 MAR 1965	12:44:55.0	49.900N	117.400W			3.80ML			CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.80 ML
898	26 MAR 1965	18:58:46.3	43.200N	126.200W			5.00MB	33		NO	015 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
899	27 MAR 1965	09:03:58.1	43.800N	126.900W			3.90MB	33		NO	006 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
900	27 MAR 1965	20:25:14.7	43.500N	125.900W			3.80MB	33		NO	005 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
901	5 APR 1965	09:27:32.5	43.900N	127.800W			5.10MB	33		NO	012 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
902	7 APR 1965	21:06:43.0	44.400N	114.800W			3.80MB	33		NO	ORIGINAL DATA SOURCE = CGS
903	18 APR 1965	19:05:34.1	44.300N	114.500W			3.50MB	33		NO	005 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
904	18 APR 1965	20:49:25.2	43.900N	127.200W			4.40MB	33		NO	007 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
905	21 APR 1965	11:47:30.0	52.300N	117.200W			3.70ML			CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.70 ML
906	27 APR 1965	06:50:LT	47.000N	114.000W	W2	V				EH	NORTHWESTERN MONTANA. FELT AREA 450 SQ MI
907	28 APR 1965	19:00:00.0	48.600N	116.900W			4.30ML			CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 4.30 ML LOCALTIME.
908	29 APR 1965	04:29:16.3	44.500N	127.900W			4.20MB	33		NO	005 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS

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CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
909	29 APR 1965	15:28:43.3	47.400N	122.400W		VII	6.50MB	57				NO REPORTED CASUALTIES 114 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS ISOSEISMAL MAP PUBLISHED BY USE MAGNITUDE(FRACTIONAL NOTATION,AVE)=6.88, AUTHORITY-BRK
910	30 APR 1965	03:14:43.6	43.600N	127.000W			4.60MB	33				NO 007 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
911	31 MAY 1965	03:20:42.0	49.300N	127.800W			4.70MB	11				NO 020 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
912	8 JUN 1965	12:41:40.8	42.100N	126.600W			4.70MB	33				NO 009 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
913	17 JUN 1965	11:22:54.9	43.200N	126.000W			4.60MB	33				NO 014 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
914	20 JUN 1965	17:23:56.8	43.100N	126.000W			4.60MB	33				NO 023 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
915	20 JUN 1965	18:04:37.3	42.900N	126.100W			5.60MB	33				NO 066 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS MAGNITUDE(FRACTIONAL NOTATION,AVE)=5.00, AUTHORITY-BRK
916	20 JUN 1965	19:17:59.9	43.200N	126.100W			4.20MB	33				NO 008 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
917	24 JUN 1965	10:54:45.5	43.600N	126.900W			4.10MB	33				NO 007 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
918	1 JUL 1965	21:41:55.0	47.700N	122.000W			3.60ML					CA ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.60 ML
919	25 JUL 1965	08:34:43.2	42.100N	126.000W			4.60MB	33				NO 010 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
920	28 JUL 1965	18:33:45.0	52.300N	119.800W			3.50ML					CA ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.50 ML
921	29 JUL 1965	04:02:42.2	44.300N	114.700W			4.40MB	33				NO 013 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
922	3 AUG 1965	01:22:46.0	49.300N	127.600W			3.00ML					CA ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.00 ML
923	19 AUG 1965	21:02:15.7	44.600N	118.400W			4.40MB	33				NO 010 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
924	31 AUG 1965	11:26:22.7	43.300N	126.000W			4.20MB	33				NO 009 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG	SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
925	2 SEP 1965	11:37:50.0	48.600N	128.000W			4.60	MB				CA	ORIGINAL DATA SOURCE = EPB
926	2 SEP 1965	21:16:44.0	48.600N	128.000W			4.00	MB				CA	ORIGINAL DATA SOURCE = EPB
927	3 SEP 1965	00:30:31.0	48.500N	128.000W			4.00	ML				CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 4.00 ML
928	4 SEP 1965	09:42:10.9	42.100N	125.400W			4.10	MB	33			NO	006 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
929	10 SEP 1965	17:57:13.5	43.900N	127.800W			4.90	MB	19			NO	015 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
930	13 SEP 1965	15:58:54.3	45.200N	114.800W			3.60	MB	33			NO	005 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
931	16 SEP 1965	07:08:51.0	51.800N	117.300W			3.10	ML				CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.10 ML
932	4 OCT 1965	10:40:19.5	44.000N	127.900W			4.60	MB	43			NO	017 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
933	9 OCT 1965	10:10:43.7	48.100N	114.400W			4.00	MB	33			NO	006 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
934	14 OCT 1965	06:00:05.0	43.400N	126.300W			4.20	MB	34			NO	007 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
935	23 OCT 1965	16:27:59.8	47.500N	122.400W			4.80	MB	23			NO	REPORTED FELT INFORMATION 013 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
936	30 OCT 1965	19:15:57.9	42.100N	121.800W			4.00	MB	25			NO	008 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
937	2 NOV 1965	08:45:57.5	44.800N	114.200W			3.60	MB	33			NO	005 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
938	7 NOV 1965	16:41:47.4	44.900N	117.000W			4.30	MB	5			NO	007 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
939	22 NOV 1965	22:53:13.7	45.100N	114.500W			3.70	MB	33			NO	005 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
940	24 NOV 1965	05:15:16.2	43.400N	125.500W			3.90	MB	32			NO	006 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
941	30 DEC 1965	04:00:40.0	50.200N	127.300W			3.40	ML				CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.40 ML

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG	SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
942	2 JAN 1966	10:10:51.0	51.500N	116.500W			4.50ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 4.50 ML
943	13 JAN 1966	07:49:06.0	49.670N	126.820W			4.00ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 4.00 ML
944	22 JAN 1966	12:43:06.0	51.380N	125.900W			3.30ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.30 ML
945	28 JAN 1966	10:15:06.4	43.600N	127.200W			5.10MB		33			NO	026 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
946	7 FEB 1966	14:03:03.3	52.000N	128.000W			3.70MB		33			NO	006 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
947	25 FEB 1966	14:57:00.5	44.700N	116.100W			3.50MB		33			NO	006 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
948	2 MAR 1966	20:51:10.0	48.400N	121.600W			3.10ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.10 ML
949	9 MAR 1966	13:06:02.8	43.400N	126.000W			4.30MB		11			NO	010 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
950	13 MAR 1966	17:36:11.0	48.400N	122.500W			3.00ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.00 ML
951	18 MAR 1966	18:05:23.6	43.700N	127.300W			5.00MB		33			NO	036 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS MAGNITUDE(FRACTIONAL NOTATION,AVE)=4.00, AUTHORITY-BRK
952	26 MAR 1966	10:47:20.1	43.800N	128.000W			4.60MB		33			NO	026 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
953	22 APR 1966	04:16:25.0	48.000N	122.000W			3.50ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.50 ML
954	28 APR 1966	22:30:06.4	43.800N	127.800W			4.80MB		33			NO	047 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
955	29 APR 1966	00:07:51.5	43.800N	127.800W			4.60MB		33			NO	023 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
956	29 MAY 1966	13:47:27.0	49.400N	114.900W			3.50ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.50 ML
957	10 JUN 1966	05:47:50.0	51.000N	125.200W			3.40ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.40 ML
958	11 JUN 1966	17:34:30.3	47.833N	122.550W		IV	3.70N'		33			NO	REPORTED FELT INFORMATION ORIGINAL DATA SOURCE = SEA

LOCAL MAGNITUDE = 3.70 SCALE =ML AUTHORITY= SEA

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG SM	H (KM)	DIS (KM)	Q S	LOCATION AND COMMENTS
959	24 JUN 1966	17:45:00.0	47.237N	122.433W	W	III				RU	TACOMA
960	12 JUL 1966	02:49:59.9	42.100N	125.000W			4.00MB	33		NO	007 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
961	23 JUL 1966	01:57:08.8	47.200N	119.500W			4.30MB	33		NO	007 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
962	30 JUL 1966	18:02:38.5	47.200N	122.000W		IV	3.40MB	16		NO	REPORTED FELT INFORMATION 006 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
963	6 AUG 1966	20:40:22.0	48.500N	124.000W			3.10ML			CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.10 ML
964	10 AUG 1966	11:32:31.0	48.100N	124.800W			3.30ML			CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.30 ML
965	11 AUG 1966	11:46:02.0	48.100N	124.700W			3.40ML			CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.40 ML
966	17 AUG 1966	14:39:50.0	48.200N	125.000W			3.80ML			CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.80 ML
967	19 AUG 1966	17:54:16.0	49.700N	126.900W			3.20ML			CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.20 ML
968	13 OCT 1966	15:57:02.0	50.400N	118.000W			3.10ML			CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.10 ML
969	14 OCT 1966	18:02:18.0	48.900N	127.000W			4.10MB	33		NO	008 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
970	29 OCT 1966	01:57:59.0	48.800N	122.700W			3.20ML			CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.20 ML
971	1 NOV 1966	10:22:53.6	47.600N	122.300W		III	3.00			RU	JUST FELT TIME REPORTED BY USE
972	1 NOV 1966	11:22:54.0	47.600N	122.300W			3.00MB			CA	ORIGINAL DATA SOURCE = EPB
973	6 NOV 1966	10:50:54.0	48.300N	119.500W			3.80ML			CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.80 ML
974	7 NOV 1966	23:28:32.3	44.000N	127.200W			4.00MB	33		NO	007 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
975	13 NOV 1966	23:28:20.0	48.500N	119.000W			3.20ML			CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.20 ML

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
976	16 NOV 1966	20:20:44.0	48.300N	120.400W			3.60ML				CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.60 ML
977	20 NOV 1966	15:47:26.7	42.200N	125.800W			4.50MB	33			NO	009 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
978	21 NOV 1966	08:51:38.0	48.200N	121.400W			3.30ML				CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.30 ML
979	5 DEC 1966	00:56:10.0	44.100N	127.800W			3.60MB	33			NO	008 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
980	8 DEC 1966	12:44:26.0	48.300N	120.000W			3.80ML				CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.80 ML
981	22 DEC 1966	20:13:18.0	48.300N	120.000W			3.20ML				CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.20 ML
982	24 DEC 1966	05:02:11.5	47.900N	121.800W		III	3.20				RU	JUST FELT
983	25 DEC 1966	05:02:10.0	49.000N	122.100W			3.50ML				CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.50 ML
984	30 DEC 1966	03:51:40.3	44.900N	117.000W			4.20MB	10			NO	005 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
985	30 DEC 1966	10:55:04.3	42.500N	124.800W			4.30MB	33			NO	007 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
986	3 JAN 1967	20:13:36.1	45.595N	126.025W			4.40MB	33			NO	HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 027 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
987	18 JAN 1967	06:58:20.4	47.300N	122.571W		IV	3.60MB	22			NO	REPORTED FELT INFORMATION 007 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
988	3 FEB 1967	01:57:05.2	43.277N	126.079W			4.10MB	33		*	NO	HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 014 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = CGS
989	6 FEB 1967	03:26:06.0	49.400N	127.400W			3.10ML				CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.10 ML
990	7 MAR 1967	03:51:08.4	47.843N	122.655W			4.20MB	35			NO	023 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
991	12 MAR 1967	01:16:30.0	47.700N	122.700W			3.20ML				CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.20 ML

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG	SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
992	5 APR 1967	02:55:25.0	48.200N	119.100W			3.40ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.40 ML
993	16 APR 1967	15:04:27.3	43.416N	126.411W			4.20MB		33		*	NO	HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 006 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = CGS
994	16 APR 1967	16:18:54.6	43.361N	126.566W			4.30MB		33			NO	HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 013 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
995	20 APR 1967	14:43:04.0	48.130N	119.350W			3.20ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.20 ML
996	20 APR 1967	15:19:33.0	48.200N	119.420W			3.30ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.30 ML
997	16 MAY 1967	01:00:38.0	49.000N	122.400W			3.40ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.40 ML
998	16 MAY 1967	03:16:12.0	49.050N	122.550W			3.10ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.10 ML
999	18 MAY 1967	02:09:38.5	43.625N	126.321W			4.00MB		33		*	NO	HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 007 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = CGS
1000	22 MAY 1967	02:59:31.4	43.628N	126.838W			4.40MB		12			NO	016 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
1001	25 MAY 1967	23:22:34.5	48.200N	122.810W			4.30MB		33			NO	REPORTED FELT INFORMATION HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 017 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
1002	3 JUN 1967	04:56:02.0	48.070N	119.500W			3.20ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.20 ML
1003	4 JUN 1967	03:26:23.0	52.200N	120.000W			3.40ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.40 ML
1004	6 JUN 1967	17:12:57.1	48.200N	119.100W			3.90MB		33			NO	008 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
1005	6 JUN 1967	17:59:04.0	49.400N	127.400W			3.10ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.10 ML
1006	6 JUN 1967	22:36:07.0	48.200N	119.000W			3.20ML					CA	ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.20 ML

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CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG	SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
1007	20 JUN 1967	11:47:44.0	48.900N	123.200W			3.60ML						CA ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.60 ML
1008	2 JUL 1967	18:18:30.0	47.700N	119.500W			3.40ML						CA ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.40 ML
1009	25 JUL 1967	08:23:54.5	44.400N	114.800W			3.80MB		33				NO 006 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
1010	5 AUG 1967	14:48:06.1	44.900N	118.000W			3.50MB		33				NO 006 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
1011	13 AUG 1967	08:36:15.8	44.200N	114.700W			3.80MB		33				NO 009 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
1012	13 AUG 1967	13:35:38.4	44.100N	114.800W			3.80MB		33				NO 005 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
1013	13 AUG 1967	16:44:22.3	43.500N	126.900W			5.00MB		33				NO 030 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
1014	31 AUG 1967	19:06:44.0	49.600N	128.000W			4.90ML						CA ORIGINAL DATA SOURCE = EPB MAGNITUDE = 4.90 ML
1015	23 SEP 1967	00:30:17.3	44.200N	114.700W			3.90MB		33				NO 011 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
1016	26 SEP 1967	05:51:11.3	42.000N	126.200W			4.90MB		33				NO 014 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
1017	7 OCT 1967	15:07:04.0	43.400N	126.900W			4.40MB		33				NO 014 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
1018	25 OCT 1967	19:22:33.6	43.400N	126.700W			4.40MB		33				NO 020 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
1019	11 NOV 1967	10:47:51.3	43.800N	127.600W			4.30MB		33				NO 011 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
1020	11 NOV 1967	11:17:02.6	44.000N	114.500W			4.10MB		10				NO 013 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
1021	12 NOV 1967	02:23:42.0	53.900N	117.300W			3.40ML						CA ORIGINAL DATA SOURCE = EPB MAGNITUDE = 3.40 ML
1022	13 NOV 1967	17:44:12.6	43.400N	126.800W			4.20MB		33				NO 008 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
1023	17 NOV 1967	07:12:57.7	43.900N	114.300W			3.50MB		33				NO 008 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
1024	4 DEC 1967	08:48:45.2	43.700N	127.400W			4.60MB	33				NO 030 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
1025	6 DEC 1967	14:37:57.8	44.200N	114.300W			3.60MB	33				NO 005 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
1026	9 DEC 1967	18:31:49.7	49.200N	127.700W			4.00MB	33				NO 016 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
1027	13 DEC 1967	10:12:49.4	43.200N	125.900W			4.30MB	33				NO 013 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
1028	18 DEC 1967	13:23:16.6	42.600N	126.000W			4.40MB	33				NO 009 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
1029	23 DEC 1967	16:34:14.7	44.000N	114.400W			3.70MB	33				NO 010 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
1030	23 DEC 1967	17:07:20.9	43.900N	114.400W			3.70MB	33				NO 009 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
1031	2 JAN 1968	14:09:44.1	43.900N	114.300W			3.60MB	33				NO 006 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
1032	9 JAN 1968	11:44:52.1	43.700N	127.600W			4.40MB	33				NO 016 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
1033	10 JAN 1968	23:58:01.0	44.600N	115.000W			3.50MB	33				NO 006 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
1034	11 JAN 1968	07:46:18.4	44.000N	114.400W			4.00MB	33				NO 012 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
1035	19 JAN 1968	20:23:37.9	43.400N	126.600W			4.60MB	33				NO 038 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
1036	27 JAN 1968	08:28:25.2	45.700N	122.800W		IV		37				NO REPORTED FELT INFORMATION 009 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = USE
1037	30 JAN 1968	01:21:07.5	43.500N	126.500W			4.10MB	22				NO 017 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
1038	7 FEB 1968	08:35:29.6	43.600N	127.300W			5.10MB	33				NO 044 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
1039	19 FEB 1968	18:03:10.4	43.600N	127.400W			4.80MB	33				NO 030 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
1040	21 FEB 1968	03:53:06.0	47.700N	114.300W			3.80MB	33				NO 006 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS

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CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG	SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
1041	21 FEB 1968	11:38:52.9	44.400N	115.300W			3.60	MB	33			NO	007 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
1042	13 MAR 1968	11:06:32.7	43.500N	126.500W			4.00	MB	33			NO	008 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
1043	21 MAR 1968	12:31:46.9	42.300N	126.200W			4.60	MB	33			NO	017 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
1044	26 MAR 1968	18:22:26.8	47.700N	114.400W		V	4.30	MB	33			NO	REPORTED FELT INFORMATION 010 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = USE
1045	12 APR 1968	10:26:08.0	48.600N	116.170W			3.60	ML	18			CA	HYPOCENTER DEPTH ASSIGNED ORIGINAL DATA SOURCE = EPB 5 STATION RECORDINGS USED IN SOLUTION MAGNITUDE = 3.60 ML
1046	28 APR 1968	05:22:37.0	44.300N	114.500W			4.00	MB	33			NO	006 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
1047	29 APR 1968	20:13:11.4	44.200N	114.600W			3.80	MB	33			NO	007 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
1048	8 MAY 1968	12:17:13.4	43.567N	127.899W			6.10	MB	33			NO	HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 046 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
1049	8 MAY 1968	17:54:55.0	43.895N	127.003W			4.30	MB	33		*	NO	HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 006 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LECS RELIABLE SOLUTION ORIGINAL DATA SOURCE = CGS
1050	9 MAY 1968	03:03:01.8	43.443N	126.967W			5.20	MB	33			NO	HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 058 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
1051	21 MAY 1968	05:07:57.0	50.800N	124.300W			3.40	ML	18			CA	HYPOCENTER DEPTH ASSIGNED ORIGINAL DATA SOURCE = EPB 8 STATION RECORDINGS USED IN SOLUTION MAGNITUDE = 3.40 ML
1052	27 MAY 1968	05:53:34.0	42.204N	119.749W			3.80	MB	33		*	NO	HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 006 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = CGS
1053	28 MAY 1968	00:08:49.0	42.262N	119.810W			4.40	MB	33		*	NO	HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 007 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = CGS

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
1054	28 MAY 1968	00:51:03.0	42.256N	119.768W			4.10MB	33		*	NO	HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 006 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = CGS
1055	28 MAY 1968	12:55:44.7	42.198N	119.812W			4.40MB	33			NO	HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 013 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
1056	30 MAY 1968	00:35:59.8	42.300N	119.800W			5.10MD	24			NO	REPORTED FELT INFORMATION 041 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = USE MAGNITUDE(FRACTIONAL NOTATION,AVE)=5.10,
1057	31 MAY 1968	03:06:38.0	42.091N	119.780W			4.10MB	33		*	NO	HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 006 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = CGS
1058	3 JUN 1968	13:27:39.7	42.200N	119.800W		V	5.00MB	20			NO	REPORTED FELT INFORMATION 029 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = USE
1059	4 JUN 1968	02:33:00.0	42.244N	119.775W			3.70MD	15		*	NO	007 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = CGS
1060	4 JUN 1968	02:34:15.7	42.300N	119.900W		VI	4.70MB	21			NO	REPORTED DAMAGE 027 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = USE
1061	4 JUN 1968	02:38:29.0	42.315N	119.786W			4.00MB	25			NO	REPORTED DAMAGE 008 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
1062	4 JUN 1968	03:35:49.8	42.318N	119.755W			4.10MB	33			NO	HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 011 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
1063	4 JUN 1968	05:52:32.0	42.288N	119.820W			4.00MB	34		*	NO	009 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = CGS
1064	4 JUN 1968	06:22:19.0	42.205N	119.847W			4.30MB	33			NO	REPORTED FELT INFORMATION HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 022 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
1065	4 JUN 1968	10:58:22.8	42.297N	119.900W			4.20MB	33			NO	REPORTED FELT INFORMATION HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 013 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG	SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
													ORIGINAL DATA SOURCE = CGS
1066	5 JUN 1968	04:51:56.8	42.305N	119.947W			4.70	MB	21			NO	REPORTED FELT INFORMATION 026 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
1067	5 JUN 1968	05:12:36.0	42.244N	119.906W			4.40	MB	33		*	NO	HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 006 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = CGS
1068	5 JUN 1968	07:37:45.0	42.251N	119.910W			4.00	MB	33		*	NO	HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 009 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = CGS
1069	5 JUN 1968	08:04:40.0	42.282N	119.801W			3.30	MB	33		*	NO	HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 005 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = CGS
1070	5 JUN 1968	08:20:38.0	42.291N	119.832W			4.00	MB	33		*	NO	HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 006 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = CGS
1071	5 JUN 1968	14:08:40.0	42.302N	119.860W			3.80	MB	33		*	NO	HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 006 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = CGS
1072	12 JUN 1968	01:20:56.0	42.100N	120.000W			3.40	MB	33		*	NO	REPORTED FELT INFORMATION HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 005 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = USE
1073	12 JUN 1968	01:46:22.4	42.103N	119.887W			4.30	MB	33			NO	REPORTED FELT INFORMATION HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 016 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
1074	19 JUN 1968	05:51:43.0	47.200N	122.500W		IV	4.00	N'			W	NO	REPORTED FELT INFORMATION ORIGINAL DATA SOURCE = USE PARAMETERS OF EPICENTER FROM UNIV. WASHINGTON, SEATTLE MAGNITUDE(FRACTIONAL NOTATION,AVE)=4.00
1075	21 JUN 1968	20:33:28.0	42.214N	119.652W			4.30	MB	23		*	NO	008 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = CGS

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
1076	22 JUN 1968	09:39:53.5	42.193N	119.824W			4.30MB	33			NO	REPORTED FELT INFORMATION HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 016 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
1077	24 JUN 1968	11:03:17.3	42.287N	119.839W			4.20MB	33			NO	HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 007 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
1078	26 JUN 1968	04:35:24.0	42.199N	125.935W			4.10MB	33		*	NO	HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 006 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = CGS
1079	13 JUL 1968	20:51:30.0	44.321N	127.943W			4.30MB	33		*	NO	HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 011 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = CGS
1080	14 JUL 1968	03:32:36.0	50.580N	117.500W			3.70ML	18			CA	HYPOCENTER DEPTH ASSIGNED ORIGINAL DATA SOURCE = EPB 4 STATION RECORDINGS USED IN SOLUTION MAGNITUDE = 3.70 ML
1081	14 JUL 1968	07:04:49.0	49.530N	127.950W			3.50ML	18			CA	HYPOCENTER DEPTH ASSIGNED ORIGINAL DATA SOURCE = EPB 4 STATION RECORDINGS USED IN SOLUTION MAGNITUDE = 3.50 ML
1082	20 JUL 1968	11:36:23.7	44.000N	114.400W		IV	3.10MB	33			NO	REPORTED FELT INFORMATION HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 006 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = USE
1083	23 JUL 1968	23:05:29.0	48.400N	114.900W			3.10ML	18			CA	HYPOCENTER DEPTH ASSIGNED ORIGINAL DATA SOURCE = EPB 2 STATION RECORDINGS USED IN SOLUTION MAGNITUDE = 3.10 ML
1084	26 JUL 1968	22:23:30.0	52.280N	118.680W			3.30ML	18			CA	HYPOCENTER DEPTH ASSIGNED ORIGINAL DATA SOURCE = EPB 5 STATION RECORDINGS USED IN SOLUTION MAGNITUDE = 3.30 ML
1085	27 JUL 1968	04:52:32.0	52.300N	118.700W			3.00ML	18			CA	HYPOCENTER DEPTH ASSIGNED ORIGINAL DATA SOURCE = EPB 1 STATION RECORDINGS USED IN SOLUTION MAGNITUDE = 3.00 ML
1086	31 JUL 1968	07:12:35.0	43.673N	127.141W			4.20MB	33		*	NO	HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 015 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG	SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
													NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = CGS
1087	10 AUG 1968	21:10:40.0	52.880N	119.630W			3.20ML		18			CA	HYPOCENTER DEPTH ASSIGNED ORIGINAL DATA SOURCE = EPB 4 STATION RECORDINGS USED IN SOLUTION MAGNITUDE = 3.20 ML
1088	12 AUG 1968	18:44:17.5	43.519N	126.369W			4.20MD		6		*	NO	007 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = CGS
1089	15 AUG 1968	13:43:28.0	50.400N	114.200W			3.30ML		18			CA	HYPOCENTER DEPTH ASSIGNED ORIGINAL DATA SOURCE = EPB 4 STATION RECORDINGS USED IN SOLUTION MAGNITUDE = 3.30 ML
1090	29 AUG 1968	10:00:44.7	44.022N	127.859W			4.30MB		25		*	NO	011 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = CGS
1091	30 AUG 1968	13:23:35.6	44.231N	115.010W			3.70MB		33		*	NO	HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 005 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = CGS
1092	30 AUG 1968	18:42:25.9	44.315N	114.889W			3.50MB		33			NO	HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 007 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
1093	31 AUG 1968	08:31:18.0	49.420N	116.920W			3.70ML		18			CA	HYPOCENTER DEPTH ASSIGNED ORIGINAL DATA SOURCE = EPB 12 STATION RECORDINGS USED IN SOLUTION MAGNITUDE = 3.70 ML
1094	6 SEP 1968	12:16:30.0	47.950N	122.800W			3.90ML		18			CA	HYPOCENTER DEPTH ASSIGNED ORIGINAL DATA SOURCE = EPB 19 STATION RECORDINGS USED IN SOLUTION MAGNITUDE = 3.90 ML
1095	15 SEP 1968	11:27:36.5	43.959N	125.277W			3.90MB		33		*	NO	HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 006 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = CGS
1096	25 SEP 1968	20:09:34.2	47.800N	122.700W		IV	2.50N'					W NO	REPORTED FELT INFORMATION ORIGINAL DATA SOURCE = USE PARAMETERS OF EPICENTER FROM UNIV. WASHINGTON, SEATTLE MAGNITUDE(FRACTIONAL NOTATION,AVE)=2.50
1097	26 SEP 1968	15:20:16.0	49.000N	128.000W			3.00ML		18			CA	HYPOCENTER DEPTH ASSIGNED ORIGINAL DATA SOURCE = EPB

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
												4 STATION RECORDINGS USED IN SOLUTION MAGNITUDE = 3.00 ML
1098	19 OCT 1968	16:35:16.1	42.172N	125.819W			4.30MB	33		*	NO	HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 007 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = CGS
1099	1 NOV 1968	10:24:59.0	50.968N	124.159W			4.50MB	33			NO	HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 032 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
1100	13 NOV 1968	11:59:39.0	52.320N	120.120W			3.20ML	18			CA	HYPOCENTER DEPTH ASSIGNED ORIGINAL DATA SOURCE = EPB 5 STATION RECORDINGS USED IN SOLUTION MAGNITUDE = 3.20 ML
1101	22 NOV 1968	11:34:21.0	48.750N	124.500W			3.10ML	18			CA	HYPOCENTER DEPTH ASSIGNED ORIGINAL DATA SOURCE = EPB 3 STATION RECORDINGS USED IN SOLUTION MAGNITUDE = 3.10 ML
1102	29 NOV 1968	17:43:00.0	44.172N	114.398W		IV					UE	6 MI S OF CLAYTON, IDAHO
1103	30 NOV 1968	14:40:08.8	46.500N	122.400W		V.	4.30MB	13			NO	REPORTED FELT INFORMATION 010 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = USE
1104	13 DEC 1968	08:50:08.0	52.400N	120.200W			3.70ML	18			CA	HYPOCENTER DEPTH ASSIGNED ORIGINAL DATA SOURCE = EPB 5 STATION RECORDINGS USED IN SOLUTION MAGNITUDE = 3.70 ML
1105	15 DEC 1968	09:12:05.9	45.807N	127.013W			4.30MB	33			NO	HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 021 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
1106	18 DEC 1968	13:09:54.6	45.767N	127.051W			4.60MB	33			NO	HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 025 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
1107	21 DEC 1968	19:56:42.0	43.080N	126.190W			4.60MB	33			NO	HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 029 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
1108	23 DEC 1968	12:39:48.9	43.305N	125.969W			4.40MB	33		*	NO	HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 012 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = CGS
1109	25 DEC 1968	09:42:45.8	43.503N	126.740W			3.90MB	33			NO	HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 014 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
												ORIGINAL DATA SOURCE = CGS
1110	6 FEB 1969	11:03:41.0	43.454N	126.027W			4.30MB	33			NO	HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 018 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
1111	14 FEB 1969	08:33:36.1	48.940N	123.070W		V	4.50N				NO	REPORTED FELT INFORMATION ORIGINAL DATA SOURCE = USE PARAMETERS OF EPICENTER FROM UNIV. WASHINGTON, SEATTLE MAGNITUDE(FRACTIONAL NOTATION,AVE)=4.50
1112	5 MAR 1969	11:43:07.3	45.700N	122.800W			3.50				RU	O.S.U., USC&GS
1113	20 MAR 1969	00:39:12.0	48.100N	121.000W			3.20ML	18			CA	HYPOCENTER DEPTH ASSIGNED ORIGINAL DATA SOURCE = EPB 3 STATION RECORDINGS USED IN SOLUTION MAGNITUDE = 3.20 ML
1114	23 MAR 1969	18:58:55.0	53.300N	126.000W			3.00ML	18			CA	HYPOCENTER DEPTH ASSIGNED ORIGINAL DATA SOURCE = EPB 5 STATION RECORDINGS USED IN SOLUTION MAGNITUDE = 3.00 ML
1115	1 APR 1969	16:45:09.1	47.900N	114.300W		VII	4.70MB	10			NO	REPORTED DAMAGE 021 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = USE LOCAL MAGNITUDE = 4.30 SCALE =ML AUTHORITY= CGS
1116	1 APR 1969	17:05:18.1	47.984N	114.387W			4.50MB	15			NO	REPORTED FELT INFORMATION 007 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
1117	6 APR 1969	00:18:00.0	47.900N	114.400W		V				Z	NO	REPORTED FELT INFORMATION ORIGINAL DATA SOURCE = USE NON-INSTRUMENTAL
1118	13 APR 1969	20:25:37.9	47.932N	114.293W			4.00MB	16			NO	REPORTED FELT INFORMATION 007 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
1119	19 APR 1969	05:46:03.2	45.888N	119.741W			3.14MC	3			UW	
1120	20 APR 1969	02:19:16.0	48.250N	119.272W			3.20MC	6			UW	
1121	22 APR 1969	13:24:02.6	44.200N	114.600W		IV	3.60MB	33		*	NO	REPORTED FELT INFORMATION HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 006 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = USE
1122	26 APR 1969	10:41:53.0	44.200N	114.500W		VI	4.90MB	13			NO	REPORTED DAMAGE 036 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
												ORIGINAL DATA SOURCE = USE LOCAL MAGNITUDE = 4.75 SCALE =ML AUTHORITY= BRK
1123	27 APR 1969	21:31:31.8	44.230N	114.556W			3.70MD	33			NO	HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 006 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
1124	28 APR 1969	11:40:00.0	47.900N	114.300W		V				Z	NO	REPORTED FELT INFORMATION ORIGINAL DATA SOURCE = USE NON-INSTRUMENTAL
1125	2 MAY 1969	05:06:27.9	44.071N	114.725W			3.60MB	33		*	NO	HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 005 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = CGS
1126	3 MAY 1969	19:25:00.0	47.900N	114.200W		IV					UE	BIG ARM, MONT.
1127	4 MAY 1969	15:40:01.0	53.700N	118.000W			3.20ML	18			CA	HYPOCENTER DEPTH ASSIGNED ORIGINAL DATA SOURCE = EPB 5 STATION RECORDINGS USED IN SOLUTION MAGNITUDE = 3.20 ML
1128	5 MAY 1969	07:09:10.9	44.100N	114.500W		V	4.60MB	33			NO	REPORTED FELT INFORMATION HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 018 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = USE
1129	6 MAY 1969	00:05:00.0	47.900N	114.200W		IV					UE	BIG ARM, MONT.
1130	6 MAY 1969	06:40:LT	47.900N	114.500W		V					EH	PROCTOR, MONT.
1131	7 MAY 1969	01:40:00.0	47.900N	114.200W		IV					UE	BIG ARM, MONT.
1132	9 MAY 1969	19:06:09.7	47.646N	119.801W			3.34MC				UW	POSSIBLE EXPLOSION.
1133	10 MAY 1969	17:48:49.8	49.097N	118.718W			3.40MB	20		*	NO	007 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = CGS
1134	11 MAY 1969	03:50:11.9	48.194N	119.228W			3.10MC	3			UW	
1135	13 MAY 1969	23:24:44.0	49.785N	114.796W			4.20MB	33		*	NO	HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 008 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = CGS
1136	19 MAY 1969	18:59:26.5	47.808N	118.285W			3.70MC	3			UW	
1137	21 MAY 1969	08:45:00.0	47.844N	114.298W		IV					UE	BIG ARM AND PROCTOR, MONT.

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG	SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
1138	26 MAY 1969	23:22:47.6	49.990N	114.962W			5.00MB		33		*		NO HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 006 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = CGS
1139	31 MAY 1969	02:24:32.3	44.152N	114.552W			3.30MB		33		*		NO HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 005 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = CGS
1140	3 JUN 1969	06:01:57.3	44.097N	114.603W			3.70MB		33				NO HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 009 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
1141	6 JUN 1969	12:00:00.0	47.865N	114.277W		IV							UE FELT DAYTON, MONT.
1142	9 JUN 1969	08:53:30.8	47.900N	114.300W		V	4.20MB		5				NO REPORTED FELT INFORMATION 020 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = USE LOCAL MAGNITUDE = 4.20 SCALE =ML AUTHORITY= CGS
1143	9 JUN 1969	09:30:00.0	47.910N	114.203W		III							UE ROLLINS, MONT.
1144	9 JUN 1969	10:45:00.0	47.900N	114.200W		IV							UE BIG ARM, MONT.
1145	11 JUN 1969	13:03:57.1	47.900N	114.200W		IV	4.10MB		31				NO REPORTED FELT INFORMATION 005 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = USE
1146	11 JUN 1969	21:45:05.2	48.844N	121.971W			3.60MB		33		*		NO HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 005 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = CGS
1147	21 JUN 1969	11:06:48.8	47.900N	114.500W		V	3.10MB		33				NO REPORTED FELT INFORMATION HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 006 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = USE
1148	25 JUN 1969	02:16:00.8	47.900N	114.300W			3.80MB		8				NO REPORTED FELT INFORMATION 006 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = USE MAGNITUDE(FRACTIONAL NOTATION,AVE)=3.80, AUTHORITY-
1149	25 JUN 1969	11:35:54.3	47.971N	114.335W			4.30MB		24				NO 007 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
1150	1 JUL 1969	08:48:00.0	47.900N	114.200W		III							UE FELT BIG ARM, MONT. AM OR PM NOT GIVEN
1151	7 JUL 1969	05:27:16.8	43.771N	126.660W			4.20MB		33		*		NO HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 010 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG	SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
													NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = CGS
1152	30 JUL 1969	23:19:54.5	49.767N	114.833W			4.40MB				E	NO	NON-TECTONIC ASSOCIATED PHENOMENA: ACCIDENTAL, CONTROLLED, OR SUSPECTED EXPLOSION 006 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION PARAMETERS OF OTHER EXPLOSIONS , NOT COMPUTED SOLUTION ORIGINAL DATA SOURCE = CGS
1153	31 JUL 1969	23:17:50.1	49.767N	114.833W			5.00MB				E	NO	NON-TECTONIC ASSOCIATED PHENOMENA: ACCIDENTAL, CONTROLLED, OR SUSPECTED EXPLOSION 007 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION PARAMETERS OF OTHER EXPLOSIONS , NOT COMPUTED SOLUTION ORIGINAL DATA SOURCE = CGS
1154	1 AUG 1969	15:58:24.7	47.787N	119.595W			3.10MC					UW	POSSIBLE EXPLOSION
1155	2 AUG 1969	03:04:16.3	47.198N	117.375W			3.40MC		15			UW	
1156	4 AUG 1969	15:31:09.8	47.683N	119.972W			3.45MC		5			UW	POSSIBLE EXPLOSION.
1157	8 AUG 1969	07:05:00.0	50.781N	118.345W			4.50MB				E	NO	NON-TECTONIC ASSOCIATED PHENOMENA: ACCIDENTAL, CONTROLLED, OR SUSPECTED EXPLOSION 008 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION PARAMETERS OF OTHER EXPLOSIONS , NOT COMPUTED SOLUTION ORIGINAL DATA SOURCE = CGS
1158	8 AUG 1969	17:04:52.2	47.744N	119.444W			3.10MC		3			UW	POSSIBLE EXPLOSION
1159	9 AUG 1969	07:05:00.0	50.781N	118.345W			4.50MB				E	NO	NON-TECTONIC ASSOCIATED PHENOMENA: ACCIDENTAL, CONTROLLED, OR SUSPECTED EXPLOSION 006 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION PARAMETERS OF OTHER EXPLOSIONS , NOT COMPUTED SOLUTION ORIGINAL DATA SOURCE = CGS
1160	10 AUG 1969	07:05:00.0	50.781N	118.345W			4.60MB				E	NO	NON-TECTONIC ASSOCIATED PHENOMENA: ACCIDENTAL, CONTROLLED, OR SUSPECTED EXPLOSION 008 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION PARAMETERS OF OTHER EXPLOSIONS , NOT COMPUTED SOLUTION ORIGINAL DATA SOURCE = CGS
1161	11 AUG 1969	07:05:00.0	50.781N	118.345W			4.40MB				E	NO	NON-TECTONIC ASSOCIATED PHENOMENA: ACCIDENTAL, CONTROLLED, OR SUSPECTED EXPLOSION 006 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION PARAMETERS OF OTHER EXPLOSIONS , NOT COMPUTED SOLUTION ORIGINAL DATA SOURCE = CGS
1162	13 AUG 1969	16:12:16.9	48.483N	126.474W			4.60MB		33			NO	HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 024 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG	SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
1163	14 AUG 1969	07:05:00.0	50.781N	118.345W			4.60MB				E	NO	NON-TECTONIC ASSOCIATED PHENOMENA: ACCIDENTAL, CONTROLLED, OR SUSPECTED EXPLOSION 006 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION PARAMETERS OF OTHER EXPLOSIONS , NOT COMPUTED SOLUTION ORIGINAL DATA SOURCE = CGS
1164	14 AUG 1969	16:31:46.6	47.633N	119.588W			3.58MC		1			UW	POSSIBLE EXPLOSION.
1165	15 AUG 1969	07:05:00.0	50.781N	118.345W			4.60MB				E	NO	NON-TECTONIC ASSOCIATED PHENOMENA: ACCIDENTAL, CONTROLLED, OR SUSPECTED EXPLOSION 005 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION PARAMETERS OF OTHER EXPLOSIONS , NOT COMPUTED SOLUTION ORIGINAL DATA SOURCE = CGS
1166	16 AUG 1969	07:05:00.0	50.781N	118.345W			5.20MB				E	NO	NON-TECTONIC ASSOCIATED PHENOMENA: ACCIDENTAL, CONTROLLED, OR SUSPECTED EXPLOSION 007 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION PARAMETERS OF OTHER EXPLOSIONS , NOT COMPUTED SOLUTION ORIGINAL DATA SOURCE = CGS
1167	17 AUG 1969	07:05:00.0	50.781N	118.345W			5.10MB				E	NO	NON-TECTONIC ASSOCIATED PHENOMENA: ACCIDENTAL, CONTROLLED, OR SUSPECTED EXPLOSION 007 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION PARAMETERS OF OTHER EXPLOSIONS , NOT COMPUTED SOLUTION ORIGINAL DATA SOURCE = CGS
1168	18 AUG 1969	23:21:33.6	49.767N	114.833W			5.00MB				E	NO	NON-TECTONIC ASSOCIATED PHENOMENA: ACCIDENTAL, CONTROLLED, OR SUSPECTED EXPLOSION 007 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION PARAMETERS OF OTHER EXPLOSIONS , NOT COMPUTED SOLUTION ORIGINAL DATA SOURCE = CGS
1169	19 AUG 1969	07:05:00.0	50.781N	118.345W			5.00MB				E	NO	NON-TECTONIC ASSOCIATED PHENOMENA: ACCIDENTAL, CONTROLLED, OR SUSPECTED EXPLOSION 009 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION PARAMETERS OF OTHER EXPLOSIONS , NOT COMPUTED SOLUTION ORIGINAL DATA SOURCE = CGS
1170	20 AUG 1969	07:05:00.0	50.781N	118.345W			5.10MB				E	NO	NON-TECTONIC ASSOCIATED PHENOMENA: ACCIDENTAL, CONTROLLED, OR SUSPECTED EXPLOSION 007 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION PARAMETERS OF OTHER EXPLOSIONS , NOT COMPUTED SOLUTION ORIGINAL DATA SOURCE = CGS
1171	21 AUG 1969	07:05:00.0	50.781N	118.345W			5.00MB				E	NO	NON-TECTONIC ASSOCIATED PHENOMENA: ACCIDENTAL, CONTROLLED, OR SUSPECTED EXPLOSION 007 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION PARAMETERS OF OTHER EXPLOSIONS , NOT COMPUTED SOLUTION ORIGINAL DATA SOURCE = CGS

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG SH	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
1172	21 AUG 1969	23:40:30.3	49.767N	114.833W			5.20MB			E	NO	NON-TECTONIC ASSOCIATED PHENOMENA: ACCIDENTAL, CONTROLLED, OR SUSPECTED EXPLOSION 006 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION PARAMETERS OF OTHER EXPLOSIONS , NOT COMPUTED SOLUTION ORIGINAL DATA SOURCE = CGS
1173	22 AUG 1969	07:05:00.0	50.781N	118.345W			4.90MB			E	NO	NON-TECTONIC ASSOCIATED PHENOMENA: ACCIDENTAL, CONTROLLED, OR SUSPECTED EXPLOSION 011 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION PARAMETERS OF OTHER EXPLOSIONS , NOT COMPUTED SOLUTION ORIGINAL DATA SOURCE = CGS
1174	23 AUG 1969	07:05:00.0	50.781N	118.345W			5.60MB			E	NO	NON-TECTONIC ASSOCIATED PHENOMENA: ACCIDENTAL, CONTROLLED, OR SUSPECTED EXPLOSION 013 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION PARAMETERS OF OTHER EXPLOSIONS , NOT COMPUTED SOLUTION ORIGINAL DATA SOURCE = CGS
1175	24 AUG 1969	07:05:00.0	50.781N	118.345W			5.10MB			E	NO	NON-TECTONIC ASSOCIATED PHENOMENA: ACCIDENTAL, CONTROLLED, OR SUSPECTED EXPLOSION 009 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION PARAMETERS OF OTHER EXPLOSIONS , NOT COMPUTED SOLUTION ORIGINAL DATA SOURCE = CGS
1176	26 AUG 1969	01:25:21.0	51.900N	120.000W			3.00ML	18			CA	HYPOCENTER DEPTH ASSIGNED ORIGINAL DATA SOURCE = EPB 4 STATION RECORDINGS USED IN SOLUTION MAGNITUDE = 3.00 ML
1177	27 AUG 1969	18:00:00.0	47.892N	114.303W		IV					UE	FELT PROCTOR, MONT.
1178	29 AUG 1969	13:04:00.0	47.900N	114.200W		IV					UE	BIG ARM, MONT.
1179	29 AUG 1969	23:17:33.5	49.767N	114.833W			5.10MB			E	NO	NON-TECTONIC ASSOCIATED PHENOMENA: ACCIDENTAL, CONTROLLED, OR SUSPECTED EXPLOSION 005 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION PARAMETERS OF OTHER EXPLOSIONS , NOT COMPUTED SOLUTION ORIGINAL DATA SOURCE = CGS
1180	31 AUG 1969	16:27:35.0	46.285N	120.776W			3.06MC	2			UW	
1181	13 SEP 1969	08:30:47.7	47.748N	119.424W			3.31MC	1			UW	POSSIBLE EXPLOSION.
1182	15 SEP 1969	00:02:39.0	47.900N	114.200W		VI	4.30MB	19			NO	REPORTED DAMAGE 010 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = USE MAGNITUDE(FRACTIONAL NOTATION,AVE)=4.30, AUTHORITY- LOCAL MAGNITUDE = 4.10 SCALE =ML AUTHORITY= CGS
1183	15 SEP 1969	03:22:41.0	47.900N	114.200W		IV	4.00MB	10			NO	REPORTED FELT INFORMATION 007 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
												ORIGINAL DATA SOURCE = USE LOCAL MAGNITUDE = 3.60 SCALE =ML AUTHORITY= CGS
1184	16 SEP 1969	22:00:44.7	49.767N	114.833W			5.00MB			E	NO	NON-TECTONIC ASSOCIATED PHENOMENA: ACCIDENTAL, CONTROLLED, OR SUSPECTED EXPLOSION 006 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION PARAMETERS OF OTHER EXPLOSIONS , NOT COMPUTED SOLUTION ORIGINAL DATA SOURCE = CGS
1185	30 SEP 1969	22:00:41.0	49.767N	114.833W			5.10MB			E	NO	NON-TECTONIC ASSOCIATED PHENOMENA: ACCIDENTAL, CONTROLLED, OR SUSPECTED EXPLOSION 006 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION PARAMETERS OF OTHER EXPLOSIONS , NOT COMPUTED SOLUTION ORIGINAL DATA SOURCE = CGS
1186	30 SEP 1969	22:49:51.0	43.628N	127.325W			4.70MB	33			NO	HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 029 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
1187	1 OCT 1969	17:11:11.3	48.506N	126.485W			4.70MB	23			NO	031 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
1188	2 OCT 1969	10:09:40.0	48.600N	121.700W			3.00ML	18			CA	HYPOCENTER DEPTH ASSIGNED ORIGINAL DATA SOURCE = EPB 3 STATION RECORDINGS USED IN SOLUTION MAGNITUDE = 3.00 ML
1189	3 OCT 1969	07:15:00.0	47.900N	114.200W		III					UE	BIG ARM, MONT.
1190	7 OCT 1969	08:11:LT	47.900N	114.500W		V					EH	PROCTOR, MONT.
1191	9 OCT 1969	07:45:16.3	43.707N	127.430W			4.80MB	10			NO	043 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS MAGNITUDE = 5.5 USING NOAA AVERAGE MS (IASPEI FORMULA)
1192	9 OCT 1969	17:07:55.0	46.766N	121.716W		V	4.00N'			W	NO	REPORTED FELT INFORMATION ORIGINAL DATA SOURCE = USE PARAMETERS OF EPICENTER FROM UNIV. WASHINGTON, SEATTLE MAGNITUDE(FRACTIONAL NOTATION,AVE)=4.00
1193	14 OCT 1969	05:15:54.0	47.800N	114.200W		V	4.40MB	8			NO	REPORTED FELT INFORMATION 006 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = USE
1194	15 OCT 1969	08:35:00.5	47.320N	121.855W			3.97ML	5		D	GS	RMS: 0.26,HSE: 86.7,ZSE: 70.7,NSTN: 8,GAP:334,D: 75
1195	1 NOV 1969	15:44:24.3	47.916N	121.850W		V	4.00N'			W	NO	REPORTED FELT INFORMATION ORIGINAL DATA SOURCE = USE PARAMETERS OF EPICENTER FROM UNIV. WASHINGTON, SEATTLE MAGNITUDE(FRACTIONAL NOTATION,AVE)=4.00
1196	5 NOV 1969	00:41:29.2	47.139N	118.242W			3.48MC	2			UW	POSSIBLE EXPLOSION.

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CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG	SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
1197	7 NOV 1969	00:11:29.1	47.900N	114.200W		VI	4.30	MB	4			NO	REPORTED DAMAGE 008 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = USE MAGNITUDE(FRACTIONAL NOTATION,AVE)=4.30
1198	10 NOV 1969	07:38:44.7	48.550N	121.510W		V	4.70	N'			W	NO	REPORTED FELT INFORMATION ORIGINAL DATA SOURCE = USE PARAMETERS OF EPICENTER FROM UNIV. WASHINGTON, SEATTLE MAGNITUDE(FRACTIONAL NOTATION,AVE)=4.70
1199	28 NOV 1969	08:13:15.0	48.000N	128.000W			3.20	ML	18			CA	HYPOCENTER DEPTH ASSIGNED ORIGINAL DATA SOURCE = EPB 5 STATION RECORDINGS USED IN SOLUTION MAGNITUDE = 3.20 ML
1200	28 NOV 1969	09:51:32.9	47.400N	122.700W		IV	3.50	N'			W	NO	REPORTED FELT INFORMATION ORIGINAL DATA SOURCE = USE PARAMETERS OF EPICENTER FROM UNIV. WASHINGTON, SEATTLE MAGNITUDE(FRACTIONAL NOTATION,AVE)=3.50
1201	28 NOV 1969	21:55:07.7	49.767N	114.833W			4.80	MB			E	NO	NON-TECTONIC ASSOCIATED PHENOMENA: ACCIDENTAL, CONTROLLED, OR SUSPECTED EXPLOSION 009 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION PARAMETERS OF OTHER EXPLOSIONS , NOT COMPUTED SOLUTION ORIGINAL DATA SOURCE = CGS
1202	4 DEC 1969	21:46:11.0	48.500N	127.500W			3.20	ML	18			CA	HYPOCENTER DEPTH ASSIGNED ORIGINAL DATA SOURCE = EPB 4 STATION RECORDINGS USED IN SOLUTION MAGNITUDE = 3.20 ML
1203	11 DEC 1969	03:19:00.0	47.900N	114.200W		IV						UE	BIG ARM, MONT.
1204	20 DEC 1969	21:54:46.0	49.767N	114.833W			4.90	MB			E	NO	NON-TECTONIC ASSOCIATED PHENOMENA: ACCIDENTAL, CONTROLLED, OR SUSPECTED EXPLOSION 012 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION PARAMETERS OF OTHER EXPLOSIONS , NOT COMPUTED SOLUTION ORIGINAL DATA SOURCE = CGS
1205	22 DEC 1969	02:44:00.0	47.900N	114.200W		IV						UE	BIG ARM, MONT.
1206	23 DEC 1969	21:53:55.7	49.767N	114.833W			4.00	MB			E	NO	NON-TECTONIC ASSOCIATED PHENOMENA: ACCIDENTAL, CONTROLLED, OR SUSPECTED EXPLOSION 005 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION PARAMETERS OF OTHER EXPLOSIONS , NOT COMPUTED SOLUTION ORIGINAL DATA SOURCE = CGS
1207	26 DEC 1969	05:28:33.8	48.000N	114.100W		IV			33			NO	REPORTED FELT INFORMATION HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 006 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = USE

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
1208	19 JAN 1970	12:11:18.7	47.886N	114.269W			4.00MB	18			NO	008 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
1209	30 JAN 1970	00:35:31.5	46.843N	118.284W			3.04MC	3			UW	POSSIBLE EXPLOSION.
1210	31 JAN 1970	11:31:29.3	42.245N	126.468W			4.50MB	33			NO	HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 025 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
1211	4 FEB 1970	23:39:54.0	47.900N	114.200W		V		20			NO	REPORTED FELT INFORMATION 006 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = USE
1212	9 FEB 1970	06:19:37.0	47.628N	120.289W			3.02MC	2			UW	POSSIBLE EXPLOSION.
1213	10 FEB 1970	20:21:11.8	47.700N	122.300W		V	3.90N'	33			NO	REPORTED FELT INFORMATION 008 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = USE LOCAL MAGNITUDE = 3.90 SCALE =ML AUTHORITY= CGS
1214	22 FEB 1970	03:31:34.5	43.916N	127.875W			3.90MB	33		*	NO	HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 015 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = CGS
1215	22 FEB 1970	15:22:43.6	43.489N	126.819W			4.50MB	33			NO	HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 021 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
1216	22 FEB 1970	21:40:46.3	47.900N	114.300W		IV		9			NO	REPORTED FELT INFORMATION 006 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = USE
1217	4 MAR 1970	15:26:40.0	48.300N	128.000W			3.40ML	18			CA	HYPOCENTER DEPTH ASSIGNED ORIGINAL DATA SOURCE = EPB 4 STATION RECORDINGS USED IN SOLUTION MAGNITUDE = 3.40 ML
1218	20 MAR 1970	19:29:30.5	43.601N	127.307W			4.70MB	33			NO	HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 033 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
1219	21 MAR 1970	17:59:54.0	53.650N	114.440W			3.10MN	18			CA	HYPOCENTER DEPTH ASSIGNED STANDARD ERRORS: T=2, X=0.14, Y=0.05, Z= 0 ORIGINAL DATA SOURCE = EPB 5 STATION RECORDINGS USED IN SOLUTION MAGNITUDE = 3.10 MN
1220	2 APR 1970	11:18:11.5	47.900N	114.100W		IV		33		*	NO	REPORTED FELT INFORMATION HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 006 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
												NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = USE
1221	5 APR 1970	15:00:24.0	47.500N	123.500W			3.20ML	18			CA	HYPOCENTER DEPTH ASSIGNED ORIGINAL DATA SOURCE = EPB 5 STATION RECORDINGS USED IN SOLUTION MAGNITUDE = 3.20 ML
1222	14 APR 1970	12:24:28.0	47.000N	122.500W			3.20ML	18			CA	HYPOCENTER DEPTH ASSIGNED ORIGINAL DATA SOURCE = EPB 5 STATION RECORDINGS USED IN SOLUTION MAGNITUDE = 3.20 ML
1223	14 MAY 1970	03:35:54.3	42.519N	126.386W			4.70MB	33			NO	HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 036 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
1224	14 MAY 1970	08:18:47.2	42.431N	126.582W			4.10MB	33		*	NO	HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 011 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = CGS
1225	18 MAY 1970	05:29:54.0	48.600N	122.700W			4.00MB	11			NO	REPORTED FELT INFORMATION 008 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = USE
1226	23 MAY 1970	15:08:04.5	47.800N	114.200W		V	3.60MB	17			NO	REPORTED FELT INFORMATION 009 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = USE
1227	28 MAY 1970	17:38:32.1	48.450N	126.659W			4.90MB	3			NO	057 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = CGS
1228	11 JUL 1970	10:24:31.1	48.181N	121.304W			3.02	32			UW	STATIONS USED= 4, RMS= .03, MAG STD ERR= .23
1229	23 JUL 1970	13:31:40.0	48.500N	128.000W			3.80ML	18			CA	HYPOCENTER DEPTH ASSIGNED ORIGINAL DATA SOURCE = EPB 5 STATION RECORDINGS USED IN SOLUTION MAGNITUDE = 3.80 ML
1230	7 AUG 1970	20:57:44.4	44.440N	117.320W			3.90MB			E	NO	NON-TECTONIC ASSOCIATED PHENOMENA: ACCIDENTAL, CONTROLLED, OR SUSPECTED EXPLOSION 005 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION PARAMETERS OF OTHER EXPLOSIONS , NOT COMPUTED SOLUTION ORIGINAL DATA SOURCE = CGS
1231	23 AUG 1970	11:11:40.7	46.744N	119.344W			3.35MC	2			UW	
1232	1 SEP 1970	12:33:50.1	47.900N	114.400W		V	4.00MB	5			NO	REPORTED FELT INFORMATION 006 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = USE

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
1233	4 SEP 1970	10:21:36.2	47.609N	121.779W			3.24	15			UW	STATIONS USED= 5, RMS= .06, MAG STD ERR= .40
1234	4 SEP 1970	21:23:21.0	48.500N	127.500W			3.50ML	18			CA	HYPOCENTER DEPTH ASSIGNED ORIGINAL DATA SOURCE = EPB 5 STATION RECORDINGS USED IN SOLUTION MAGNITUDE = 3.50 ML
1235	11 SEP 1970	02:20:54.1	46.642N	120.386W			3.47MC	10			UW	
1236	11 SEP 1970	03:17:06.3	42.178N	126.598W			4.60MB	33		*	NO	HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 015 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = CGS
1237	2 OCT 1970	15:56:24.7	46.760N	119.371W			3.34MC	4			UW	
1238	19 OCT 1970	07:15:08.1	46.903N	117.683W			3.20MC	3			UW	
1239	24 OCT 1970	22:32:07.9	47.334N	122.373W			4.09	16			UW	STATIONS USED= 5, RMS= .08, MAG STD ERR= .00
1240	2 NOV 1970	11:57:33.0	52.700N	127.000W			3.10ML	18			CA	HYPOCENTER DEPTH ASSIGNED ORIGINAL DATA SOURCE = EPB 3 STATION RECORDINGS USED IN SOLUTION MAGNITUDE = 3.10 ML
1241	6 NOV 1970	18:15:16.8	46.691N	118.883W			3.08MC	3			UW	
1242	8 NOV 1970	08:08:11.0	44.355N	115.578W			3.80MB	33		*	NO	HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 006 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = NOS
1243	16 NOV 1970	02:41:47.0	50.600N	120.600W			3.20ML	18			CA	HYPOCENTER DEPTH ASSIGNED ORIGINAL DATA SOURCE = EPB 2 STATION RECORDINGS USED IN SOLUTION MAGNITUDE = 3.20 ML
1244	26 NOV 1970	03:11:42.8	43.776N	127.449W			5.60MB	14			NO	115 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = NOS MAGNITUDE = 5.9 USING NOAA AVERAGE MS (IASPEI FORMULA) MAGNITUDE(FRACTIONAL NOTATION,AVE)=6.00, AUTHORITY-BRK
1245	27 NOV 1970	11:18:45.0	44.457N	115.609W			3.50MB	33		*	NO	HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 006 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = NOS
1246	27 NOV 1970	22:17:50.0	52.640N	119.130W			3.80MN	10			CA	HYPOCENTER DEPTH ASSIGNED ORIGINAL DATA SOURCE = EPB 7 STATION RECORDINGS USED IN SOLUTION MAGNITUDE = 3.80 MN

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG SH	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
1247	29 NOV 1970	02:15:53.5	47.388N	121.522W			3.33	10			UW	STATIONS USED= 5, RMS= .12, MAG STD ERR= .52
1248	1 DEC 1970	08:06:41.8	52.661N	119.336W			4.20MB	15		*	NO	REPORTED FELT INFORMATION HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSICIST 005 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = NOS
1249	5 DEC 1970	02:16:30.9	44.466N	115.447W			3.90MB	33			NO	HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 009 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = NOS
1250	5 DEC 1970	02:54:16.9	44.348N	115.494W			4.30MB	33			NO	HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 014 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = NOS
1251	5 DEC 1970	08:17:46.0	44.492N	115.501W			3.70MB	33			NO	HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 007 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = NOS
1252	6 DEC 1970	09:33:47.5	44.476N	115.422W			4.30MB	33			NO	HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 008 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = NOS
1253	9 DEC 1970	17:10:24.9	46.849N	120.854W			3.42MC	3			UW	POSSIBLE EXPLOSION.
1254	12 DEC 1970	03:15:03.2	43.472N	127.035W			4.60MB	33		*	NO	HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 013 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = NOS
1255	14 JAN 1971	08:29:37.4	47.295N	123.354W			3.76	39			UW	STATIONS USED= 5, RMS= .07, MAG STD ERR= .26
1256	22 JAN 1971	14:39:55.1	44.087N	114.586W			3.80MB	33		*	NO	HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 006 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = NOS
1257	25 JAN 1971	21:37:52.9	48.380N	123.248W			3.46	49			UW	STATIONS USED= 4, RMS= .07, MAG STD ERR= .28
1258	26 JAN 1971	10:17:05.0	46.921N	119.554W			3.22MC	1			UW	
1259	7 FEB 1971	23:58:58.4	47.403N	122.901W			3.01	43			UW	STATIONS USED= 5, RMS= .10, MAG STD ERR= .51
1260	23 FEB 1971	18:45:00.0	47.690N	114.155W		III					UE	POLSON, MONT.
1261	25 FEB 1971	15:50:56.3	43.224N	126.611W			5.00MB	33		*	NO	HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 012 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = NOS

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
1262	10 MAR 1971	15:38:28.7	49.320N	127.391W			5.00MB	33			NO	HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 040 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = NOS
1263	12 MAR 1971	05:40:00.0	47.690N	114.155W		III					UE	POLSON, MONT.
1264	3 APR 1971	02:34:31.8	47.613N	122.923W			3.20	18			UW	STATIONS USED= 5, RMS= .06, MAG STD ERR= .36
1265	7 APR 1971	19:05:00.0	47.690N	114.155W		III					UE	POLSON, MONT.
1266	8 APR 1971	08:15:00.0	47.690N	114.155W		III					UE	POLSON, MONT.
1267	12 APR 1971	12:43:24.4	47.830N	114.319W		IV	4.40MB	21			NO	REPORTED FELT INFORMATION 009 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = NOS LOCAL MAGNITUDE = 3.70 SCALE =ML AUTHORITY= NOS WINDOW BROKE AND DISHES FELL IN AN AREA ABOUT 13KM FROM POLSON, MONT. ON THE WEST SIDE OF INDIAN BAY.
1268	12 APR 1971	16:05:00.0	47.800N	114.300W		III					UE	POLSON, MONT. LIGHT SHOCK
1269	12 APR 1971	19:05:00.0	47.800N	114.300W		III					UE	POLSON, MONT.
1270	13 APR 1971	22:15:00.0	47.690N	114.155W		III					UE	POLSON, MONT.
1271	14 APR 1971	10:00:00.0	47.690N	114.155W		III					UE	POLSON, MONT.
1272	16 APR 1971	19:29:44.0	47.638N	114.466W			4.50MB	5		*	NO	REPORTED FELT INFORMATION HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSICIST 006 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = NOS LOCAL MAGNITUDE = 3.20 SCALE =ML AUTHORITY= NOS
1273	17 APR 1971	14:35:00.0	47.690N	114.155W		III					UE	POLSON, MONT. LIGHT TREMOR AT BIG ARM, MONT.
1274	18 APR 1971	14:52:04.5	47.777N	114.354W			4.40MB	5		*	NO	REPORTED FELT INFORMATION HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSICIST 010 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = NOS LOCAL MAGNITUDE = 3.70 SCALE =ML AUTHORITY= NOS
1275	20 APR 1971	05:45:00.0	47.700N	114.600W		III					UE	FELT AT BIG ARM AND POLSON, MONT.
1276	20 APR 1971	06:04:12.0	47.714N	114.638W		III	4.40MB	5		*	NO	HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSICIST 006 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = NOS LOCAL MAGNITUDE = 3.30 SCALE =ML AUTHORITY= NOS FELT AT BIG ARM AND POLSON, MONT.

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG SH	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
												DEPTH OF 5 KM
1277	20 APR 1971	20:00:36.3	47.715N	114.392W			4.40MB	5		*	NO	HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSICIST 005 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = NOS LOCAL MAGNITUDE = 3.20 SCALE =ML AUTHORITY= NOS
1278	20 APR 1971	20:10:00.0	47.700N	114.400W		III					UE	POLSON, MONT. FELT AT BIG ARM; LOUD TREMOR
1279	21 APR 1971	13:20:31.0	47.926N	114.197W			4.40MB	5		*	NO	HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSICIST 007 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = NOS LOCAL MAGNITUDE = 3.60 SCALE =ML AUTHORITY= NOS
1280	21 APR 1971	13:43:03.3	47.719N	114.304W			4.50MB	2		*	NO	010 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = NOS LOCAL MAGNITUDE = 3.40 SCALE =ML AUTHORITY= NOS
1281	21 APR 1971	14:08:40.9	47.742N	114.257W			3.00N'	5		*	NO	HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSICIST 006 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = NOS LOCAL MAGNITUDE = 3.00 SCALE =ML AUTHORITY= NOS
1282	22 APR 1971	09:45:00.0	47.800N	114.300W		III					UE	POLSON, MONT.
1283	22 APR 1971	10:05:00.0	47.800N	114.300W		III					UE	POLSON, MONT.
1284	22 APR 1971	12:08:00.0	47.800N	114.300W		III					UE	FELT AT KERR DAM, MONT.
1285	22 APR 1971	13:12:13.6	47.843N	114.290W			4.30MB	5		*	NO	HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSICIST 007 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = NOS LOCAL MAGNITUDE = 3.10 SCALE =ML AUTHORITY= NOS
1286	23 APR 1971	18:40:57.1	47.648N	114.252W			3.10N'	5		*	NO	HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSICIST 005 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = NOS LOCAL MAGNITUDE = 3.10 SCALE =ML AUTHORITY= NOS
1287	24 APR 1971	06:03:06.0	53.720N	119.150W			3.10MN	18			CA	HYPOCENTER DEPTH ASSIGNED STANDARD ERRORS: T=1, X=0.06, Y=0.03, Z= 0 ORIGINAL DATA SOURCE = EPB 8 STATION RECORDINGS USED IN SOLUTION MAGNITUDE = 3.10 MN
1288	25 APR 1971	01:30:00.0	47.800N	114.300W		IV					UE	DIXON, KERR DAM, MAHONEY, ROLLINS AND POLSON, MONT.

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG	SM	H (KM)	DIS (KM)	Q	S	L O C A T I O N A N D C O M M E N T S
1289	26 APR 1971	09:02:26.1	47.800N	114.300W			4.50MB		5				NO REPORTED DAMAGE HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSICIST 016 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = NOS LOCAL MAGNITUDE = 4.20 SCALE =ML AUTHORITY= NOS
1290	27 APR 1971	10:20:00.0	47.690N	114.155W		III							UE POLSON, MONT.
1291	30 APR 1971	04:37:39.1	47.854N	114.240W			3.90MB		5		*		NO REPORTED FELT INFORMATION 008 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = NOS LOCAL MAGNITUDE = 3.10 SCALE =ML AUTHORITY= NOS
1292	30 APR 1971	07:15:00.0	47.690N	114.155W		III							UE POLSON, MONT.
1293	30 APR 1971	22:40:00.0	47.690N	114.155W		III							UE POLSON, MONT.
1294	30 APR 1971	23:04:00.0	47.690N	114.155W		III							UE POLSON, MONT.
1295	1 MAY 1971	09:05:00.0	47.690N	114.155W		III							UE POLSON, MONT.
1296	1 MAY 1971	16:05:00.0	47.690N	114.155W		III							UE POLSON, MONT.
1297	2 MAY 1971	16:55:00.0	47.690N	114.155W		III							UE POLSON, MONT.
1298	3 MAY 1971	12:50:00.0	47.690N	114.155W		III							UE POLSON, MONT.
1299	3 MAY 1971	13:20:00.0	47.690N	114.155W		III							UE POLSON, MONT.
1300	5 MAY 1971	05:27:00.0	47.690N	114.155W		III							UE POLSON, MONT.
1301	7 MAY 1971	08:05:00.0	47.690N	114.155W		III							UE SLIGHT SHOCK POLSON AND BIG ARM, MONT.
1302	7 MAY 1971	12:40:00.0	47.690N	114.155W		III							UE SLIGHT SHOCK AT POLSON AND BIG ARM, MONT.
1303	7 MAY 1971	16:12:00.0	47.797N	114.293W		IV							UE BIG ARM, MONT.
1304	8 MAY 1971	10:45:00.0	47.690N	114.155W		III							UE POLSON, MONT.
1305	8 MAY 1971	10:47:00.0	47.690N	114.155W		III							UE POLSON, MONT.
1306	8 MAY 1971	10:50:00.0	47.690N	114.155W		III							UE POLSON, MONT.
1307	8 MAY 1971	10:55:00.0	47.690N	114.155W		III							UE POLSON, MONT.
1308	9 MAY 1971	06:40:00.0	47.690N	114.155W		III							UE POLSON, MONT.
1309	9 MAY 1971	06:58:00.0	47.690N	114.155W		III							UE POLSON, MONT.
1310	10 MAY 1971	17:17:00.0	47.690N	114.155W		III							UE POLSON, MONT.

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG	SM	H (KM)	DIS (KM)	Q	S LOCATION AND COMMENTS
1311	11 MAY 1971	00:58:00.0	47.690N	114.155W		III						UE POLSON, MONT.
1312	13 MAY 1971	04:00:00.0	47.797N	114.293W		III						UE BIG ARM AND POLSON, MONT.
1313	13 MAY 1971	04:17:00.0	47.797N	114.293W		III						UE BIG ARM AND POLSON, MONT.
1314	13 MAY 1971	04:45:00.0	47.797N	114.293W		III						UE BIG ARM AND POLSON, MONT.
1315	14 MAY 1971	21:05:00.0	47.797N	114.293W		III						UE BIG ARM AND POLSON, MONT.
1316	14 MAY 1971	21:45:00.0	47.797N	114.293W		III						UE BIG ARM AND POLSON, MONT.
1317	15 MAY 1971	04:06:00.0	47.797N	114.293W		III						UE BIG ARM AND POLSON, MONT.
1318	17 MAY 1971	09:11:43.7	42.532N	126.360W			4.90MD		33		*	NO HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 011 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = NOS
1319	17 MAY 1971	22:45:00.0	47.797N	114.293W		III						UE BIG ARM, MONT.
1320	19 MAY 1971	04:45:00.0	47.797N	114.293W		III						UE BIG ARM, MONT.
1321	20 MAY 1971	07:52:43.8	42.187N	126.887W			4.70MB		33		*	NO HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 013 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = NOS MAGNITUDE = 4.5 USING NOAA AVERAGE MS (IASPEI FORMULA)
1322	20 MAY 1971	08:01:08.6	42.307N	126.339W			5.00MD		33		*	NO HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 022 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = NOS MAGNITUDE = 5.0 USING NOAA AVERAGE MS (IASPEI FORMULA)
1323	22 MAY 1971	04:10:00.0	47.797N	114.293W		III						UE BIG ARM, MONT.
1324	22 MAY 1971	15:57:10.8	47.788N	118.964W			3.32MC		15			UW
1325	24 MAY 1971	14:30:00.0	47.797N	114.293W		III						UE BIG ARM AND POLSON, MONT.
1326	25 MAY 1971	02:12:00.0	47.690N	114.155W		III						UE POLSON, MONT.
1327	25 MAY 1971	06:08:00.0	47.690N	114.155W		III						UE POLSON, MONT.
1328	27 MAY 1971	14:50:00.0	47.690N	114.155W		III						UE POLSON, MONT.
1329	27 MAY 1971	19:36:00.0	47.690N	114.155W		III						UE POLSON, MONT.
1330	28 MAY 1971	10:42:07.0	46.557N	122.432W			3.44		21			UW STATIONS USED= 6, RMS= .11, MAG STD ERR= .46

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG	SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
1331	30 MAY 1971	08:58:56.6	47.707N	114.135W			4.20MB		5				NO HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSICIST 008 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = NOS LOCAL MAGNITUDE = 2.90 SCALE =ML AUTHORITY= NOS
1332	1 JUN 1971	19:02:00.0	47.690N	114.155W		III							UE POLSON, MONT.
1333	2 JUN 1971	05:55:00.0	47.690N	114.155W		III							UE POLSON, MONT.
1334	2 JUN 1971	23:12:00.0	47.690N	114.155W		III							UE POLSON, MONT.
1335	3 JUN 1971	03:05:00.0	47.690N	114.155W		III							UE POLSON, MONT.
1336	3 JUN 1971	08:15:00.0	47.690N	114.155W		III							UE POLSON, MONT.
1337	3 JUN 1971	15:45:00.0	47.690N	114.155W		III							UE POLSON, MONT.
1338	3 JUN 1971	22:30:00.0	47.690N	114.155W		III							UE POLSON, MONT.
1339	4 JUN 1971	10:00:00.0	47.690N	114.155W		III							UE POLSON, MONT.
1340	8 JUN 1971	10:25:00.0	47.690N	114.155W		III							UE POLSON, MONT.
1341	10 JUN 1971	00:05:00.0	47.690N	114.155W		III							UE POLSON, MONT.
1342	10 JUN 1971	05:45:00.0	47.690N	114.155W		III							UE POLSON, MONT.
1343	11 JUN 1971	23:35:00.0	47.700N	114.300W		IV							UE KERR DAM AND POLSON, MONT.
1344	12 JUN 1971	00:52:17.3	47.717N	114.265W			4.40MB		5			*	NO REPORTED FELT INFORMATION HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSICIST 008 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = NOS
1345	13 JUN 1971	18:51:21.5	47.748N	114.276W			4.40MB		5			*	NO REPORTED FELT INFORMATION HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSICIST 008 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = NOS
1346	14 JUN 1971	07:25:00.0	47.690N	114.155W		III							UE POLSON, MONT.
1347	16 JUN 1971	08:00:00.0	47.690N	114.155W		III							UE POLSON, MONT.
1348	19 JUN 1971	05:18:00.0	47.690N	114.155W		III							UE POLSON, MONT.
1349	19 JUN 1971	09:48:00.0	47.690N	114.155W		III							UE POLSON, MONT.
1350	20 JUN 1971	21:25:00.0	47.690N	114.155W		III							UE POLSON, MONT.

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG	SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
1351	22 JUN 1971	02:10:00.0	47.690N	114.155W		III						UE	POLSON, MONT.
1352	22 JUN 1971	10:02:00.0	47.690N	114.155W		III						UE	POLSON, MONT.
1353	23 JUN 1971	10:55:00.0	47.690N	114.155W		III						UE	POLSON, MONT.
1354	23 JUN 1971	19:15:14.2	49.852N	114.769W			4.80MB				E	NO	NON-TECTONIC ASSOCIATED PHENOMENA: ACCIDENTAL, CONTROLLED, OR SUSPECTED EXPLOSION HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSICIST 007 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION PARAMETERS OF OTHER EXPLOSIONS , NOT COMPUTED SOLUTION ORIGINAL DATA SOURCE = ERL
1355	24 JUN 1971	02:26:52.8	47.580N	122.193W			3.26		23			UW	STATIONS USED= 6, RMS= .09, MAG STD ERR= .28
1356	24 JUN 1971	06:55:00.0	47.690N	114.155W		III						UE	POLSON, MONT.
1357	24 JUN 1971	15:10:00.0	47.690N	114.155W		III						UE	POLSON, MONT.
1358	25 JUN 1971	13:45:40.0	47.573N	122.204W			3.01		22			UW	STATIONS USED= 6, RMS= .07, MAG STD ERR= .54
1359	26 JUN 1971	04:18:00.0	47.690N	114.155W		III						UE	POLSON, MONT.
1360	26 JUN 1971	05:54:00.0	47.690N	114.155W		III						UE	POLSON, MONT.
1361	26 JUN 1971	22:02:14.4	47.578N	122.194W			3.29		23			UW	STATIONS USED= 6, RMS= .04, MAG STD ERR= .42
1362	29 JUN 1971	09:55:00.0	47.690N	114.155W		III						UE	POLSON, MONT.
1363	5 JUL 1971	02:36:00.0	47.690N	114.155W		III						UE	POLSON, MONT.
1364	11 JUL 1971	18:34:00.0	47.690N	114.155W		III						UE	POLSON, MONT.
1365	12 JUL 1971	18:28:00.0	47.690N	114.155W		III						UE	POLSON, MONT.
1366	12 JUL 1971	20:10:00.0	47.690N	114.155W		III						UE	POLSON, MONT.
1367	13 JUL 1971	18:51:32.1	47.760N	114.240W			3.40N'		5			NO	REPORTED DAMAGE HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSICIST 008 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = ERL LOCAL MAGNITUDE = 3.40 SCALE =ML AUTHORITY= ERL
1368	14 JUL 1971	14:50:00.0	47.690N	114.155W		III						UE	POLSON, MONT.
1369	23 JUL 1971	15:01:50.7	47.814N	114.222W			4.00N'		5			NO	REPORTED DAMAGE HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSICIST 011 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = ERL LOCAL MAGNITUDE = 4.00 SCALE =ML AUTHORITY= ERL

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG	SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
1370	23 JUL 1971	15:44:27.4	47.826N	114.281W			3.50N'		5				NO REPORTED FELT INFORMATION HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSICIST 008 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = ERL LOCAL MAGNITUDE = 3.50 SCALE =ML AUTHORITY= ERL
1371	24 JUL 1971	11:38:26.0	47.850N	114.263W			4.50MB		5		*		NO REPORTED FELT INFORMATION HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSICIST 010 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = ERL LOCAL MAGNITUDE = 3.20 SCALE =ML AUTHORITY= ERL
1372	24 JUL 1971	11:43:02.6	47.823N	114.341W			4.30MB		5		*		NO REPORTED FELT INFORMATION HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSICIST 008 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = ERL LOCAL MAGNITUDE = 2.80 SCALE =ML AUTHORITY= ERL
1373	25 JUL 1971	13:20:00.0	47.690N	114.155W		III							UE POLSON, MONT.
1374	26 JUL 1971	06:05:00.0	47.690N	114.155W		III							UE POLSON, MONT.
1375	28 JUL 1971	06:04:19.4	47.804N	114.312W		V	4.90MB		5				NO REPORTED FELT INFORMATION HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSICIST 016 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = ERL LOCAL MAGNITUDE = 4.40 SCALE =ML AUTHORITY= ERL
1376	28 JUL 1971	12:44:00.0	47.690N	114.155W		III							UE POLSON, MONT.
1377	28 JUL 1971	14:55:00.0	47.690N	114.155W		III							UE POLSON, MONT.
1378	28 JUL 1971	18:36:00.0	47.690N	114.155W		III							UE POLSON, MONT.
1379	28 JUL 1971	18:47:00.0	47.690N	114.155W		III							UE POLSON, MONT.
1380	28 JUL 1971	19:03:00.0	47.690N	114.155W		III							UE POLSON, MONT.
1381	1 AUG 1971	10:27:00.0	47.690N	114.155W		III							UE POLSON, MONT.
1382	3 AUG 1971	23:52:00.0	47.690N	114.155W		III							UE POLSON, MONT.
1383	8 AUG 1971	19:34:00.0	47.690N	114.155W		III							UE POLSON, MONT.
1384	9 AUG 1971	15:53:00.0	47.690N	114.155W		III							UE POLSON, MONT.
1385	10 AUG 1971	20:26:47.8	47.573N	122.210W			3.14		22				UW STATIONS USED= 7, RMS= .13, MAG STD ERR= .28
1386	14 AUG 1971	23:24:00.0	47.690N	114.155W		III							UE POLSON, MONT.

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG SM	H (KM)	DIS (KM)	Q S	LOCATION AND COMMENTS
1387	18 AUG 1971	05:18:08.0	53.890N	117.160W			3.00MN	18		CA	HYPOCENTER DEPTH ASSIGNED STANDARD ERRORS: T=1, X=0.10, Y=0.10, Z= 0 ORIGINAL DATA SOURCE = EPB 2 STATION RECORDINGS USED IN SOLUTION MAGNITUDE = 3.00 MN
1388	18 AUG 1971	23:44:25.0	47.610N	120.083W			3.18MC	2		UW	
1389	23 AUG 1971	22:37:00.0	47.690N	114.155W		III				UE	POLSON, MONT.
1390	24 AUG 1971	12:25:00.0	47.690N	114.155W		III				UE	POLSON, MONT.
1391	26 AUG 1971	09:14:00.0	47.690N	114.155W		III				UE	POLSON, MONT.
1392	27 AUG 1971	07:20:00.0	47.690N	114.155W		III				UE	POLSON, MONT.
1393	27 AUG 1971	16:50:00.0	47.690N	114.155W		III				UE	POLSON, MONT.
1394	28 AUG 1971	16:42:00.0	47.690N	114.155W		III				UE	POLSON, MONT.
1395	2 SEP 1971	00:06:00.0	47.690N	114.155W		III				UE	POLSON, MONT.
1396	2 SEP 1971	06:34:00.0	47.690N	114.155W		III				UE	POLSON, MONT.
1397	2 SEP 1971	08:55:00.0	47.690N	114.155W		III				UE	POLSON, MONT.
1398	5 SEP 1971	18:42:00.0	47.690N	114.155W		III				UE	POLSON, MONT.
1399	9 SEP 1971	00:20:17.2	47.779N	114.248W			3.90MB	5			NO REPORTED FELT INFORMATION HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSICIST 009 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = ERL
1400	9 SEP 1971	20:32:58.6	47.569N	122.211W			3.51	23		UW	STATIONS USED= 7, RMS= .11, MAG STD ERR= .11
1401	11 SEP 1971	03:10:00.0	47.690N	114.155W		III				UE	POLSON, MONT.
1402	13 SEP 1971	22:41:00.0	47.690N	114.155W		III				UE	POLSON, MONT.
1403	18 SEP 1971	06:38:00.0	47.690N	114.155W		III				UE	POLSON, MONT.
1404	19 SEP 1971	12:57:00.0	47.690N	114.155W		III				UE	POLSON, MONT.
1405	22 SEP 1971	11:37:10.0	48.800N	121.800W			3.00ML	18		CA	HYPOCENTER DEPTH ASSIGNED ORIGINAL DATA SOURCE = EPB 2 STATION RECORDINGS USED IN SOLUTION MAGNITUDE = 3.00 ML
1406	1 OCT 1971	13:15:00.0	47.690N	114.155W		III				UE	POLSON, MONT.
1407	4 OCT 1971	18:45:19.5	48.261N	122.901W			3.18	22		UW	STATIONS USED= 7, RMS= .14, MAG STD ERR= .18

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
1408	20 OCT 1971	08:09:55.5	46.547N	121.814W			3.35	7				UW STATIONS USED= 6, RMS= .09, MAG STD ERR= .61
1409	22 OCT 1971	06:39:00.0	47.690N	114.155W		III						UE POLSON, MONT.
1410	25 OCT 1971	05:06:00.0	47.690N	114.155W		III						UE POLSON, MONT.
1411	25 OCT 1971	18:52:49.0	46.708N	119.548W		III	3.82MC					UW FELT
1412	25 OCT 1971	19:18:00.0	47.690N	114.155W		III						UE POLSON, MONT.
1413	26 OCT 1971	07:14:00.0	47.690N	114.155W		III						UE POLSON, MONT.
1414	27 OCT 1971	14:06:00.0	47.690N	114.155W		III						UE POLSON, MONT.
1415	6 NOV 1971	19:10:00.0	47.690N	114.155W		III						UE POLSON, MONT.
1416	8 NOV 1971	22:42:00.0	47.690N	114.155W		III						UE POLSON, MONT.
1417	11 NOV 1971	21:01:53.4	48.236N	121.754W			3.15	10				UW STATIONS USED= 5, RMS= .08, MAG STD ERR= .35
1418	16 NOV 1971	18:48:00.0	47.690N	114.155W		III						UE POLSON, MONT.
1419	17 NOV 1971	16:54:00.0	47.690N	114.155W		III						UE POLSON, MONT.
1420	23 NOV 1971	02:12:14.5	48.269N	121.182W			4.14	17				UW STATIONS USED= 7, RMS= .08, MAG STD ERR= .03
1421	26 NOV 1971	06:18:00.0	47.690N	114.155W		III						UE POLSON, MONT.
1422	28 NOV 1971	18:52:41.1	47.835N	123.963W			3.39	43				UW STATIONS USED= 7, RMS= .27, MAG STD ERR= .12
1423	30 NOV 1971	01:47:24.0	48.500N	115.300W			3.00ML	18				CA HYPOCENTER DEPTH ASSIGNED STANDARD ERRORS: T=2, X=0.06, Y=0.09, Z= 0 ORIGINAL DATA SOURCE = EPB 4 STATION RECORDINGS USED IN SOLUTION MAGNITUDE = 3.00 ML
1424	6 DEC 1971	07:55:00.0	47.690N	114.155W		III						UE POLSON, MONT.
1425	7 DEC 1971	03:50:00.0	47.690N	114.155W		III						UE POLSON, MONT.
1426	13 DEC 1971	20:59:03.6	47.051N	123.446W			3.56	28				UW STATIONS USED= 6, RMS= .14, MAG STD ERR= .10
1427	20 DEC 1971	10:33:00.0	47.690N	114.155W		III						UE POLSON, MONT.
1428	22 DEC 1971	20:46:53.8	47.521N	122.867W			3.37	20				UW STATIONS USED= 6, RMS= .02, MAG STD ERR= .13
1429	23 DEC 1971	18:48:57.0	50.500N	124.500W			3.30ML	18				CA HYPOCENTER DEPTH ASSIGNED ORIGINAL DATA SOURCE = EPB 6 STATION RECORDINGS USED IN SOLUTION MAGNITUDE = 3.30 ML

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
1430	24 DEC 1971	17:30:00.0	47.690N	114.155W		III					UE	POLSON, MONT.
1431	27 DEC 1971	08:09:52.4	47.721N	114.238W			4.40MB	5		*	NO	REPORTED FELT INFORMATION HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSICIST 007 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = ERL
1432	28 DEC 1971	07:50:00.3	47.572N	122.214W			4.38	23			UW	STATIONS USED= 8, RMS= .12, MAG STD ERR= .05
1433	30 DEC 1971	14:32:17.7	47.604N	122.730W			3.21	16			UW	STATIONS USED= 7, RMS= .07, MAG STD ERR= .15
1434	30 DEC 1971	17:54:00.0	47.690N	114.155W		III					UE	POLSON, MONT.
1435	5 JAN 1972	10:32:26.6	47.769N	114.209W			4.40MB	5		*	NO	REPORTED FELT INFORMATION HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSICIST 007 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = ERL
1436	13 JAN 1972	22:06:16.6	47.318N	122.604W			3.61	45			UW	STATIONS USED= 6, RMS= .06, MAG STD ERR= .14
1437	17 JAN 1972	02:07:28.8	47.621N	121.907W			3.04	19			UW	STATIONS USED= 6, RMS= .10, MAG STD ERR= .17
1438	23 JAN 1972	10:40:40.9	43.532N	127.043W			4.80MB	33		*	NO	HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 035 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = ERL MAGNITUDE = 4.4 USING NOAA AVERAGE MS (IASPEI FORMULA)
1439	22 FEB 1972	12:35:04.9	47.326N	122.759W			3.36	7			UW	STATIONS USED= 8, RMS= .09, MAG STD ERR= .10
1440	4 MAR 1972	12:26:13.0	47.813N	114.379W			3.70N'	5			NO	REPORTED FELT INFORMATION HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSICIST 009 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = ERL LOCAL MAGNITUDE = 3.70 SCALE =ML AUTHORITY= ERL
1441	4 MAR 1972	12:42:04.5	47.818N	114.416W			4.40MB	5		*	NO	REPORTED FELT INFORMATION HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSICIST 006 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = ERL LOCAL MAGNITUDE = 3.20 SCALE =ML AUTHORITY= ERL
1442	23 MAR 1972	21:25:40.3	42.692N	126.241W			4.90MB	33		*	NO	HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 017 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = ERL

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG	SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
1443	24 MAR 1972	02:50:25.4	42.692N	126.271W			4.80MB		33		*	NO	HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 014 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = ERL
1444	28 MAR 1972	10:40:52.0	47.811N	114.387W			4.40MB		5		*	NO	HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSICIST 006 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = ERL
1445	4 APR 1972	11:01:53.3	47.889N	122.085W			3.02		24			UW	STATIONS USED= 7, RMS= .15, MAG STD ERR= .16
1446	5 APR 1972	19:14:18.8	49.809N	114.850W			4.70MB				E	NO	NON-TECTONIC ASSOCIATED PHENOMENA: ACCIDENTAL, CONTROLLED, OR SUSPECTED EXPLOSION HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSICIST 006 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION PARAMETERS OF OTHER EXPLOSIONS , NOT COMPUTED SOLUTION ORIGINAL DATA SOURCE = ERL
1447	8 APR 1972	06:24:13.7	42.646N	126.320W			5.60MB		11			NO	079 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = ERL MAGNITUDE(FRACTIONAL NOTATION,AVE)=5.50, AUTHORITY-BRK
1448	9 APR 1972	01:10:10.0	42.700N	126.275W			4.70MB		33			NO	HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 017 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = ERL
1449	9 APR 1972	21:19:25.2	48.101N	114.143W			4.50MB		5		*	NO	HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSICIST 006 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = ERL
1450	18 MAY 1972	05:07:39.3	48.419N	122.801W			3.12		13			UW	STATIONS USED= 6, RMS= .11, MAG STD ERR= .11
1451	18 MAY 1972	12:09:03.6	47.690N	114.155W		IV						UE	NEAR POLSON, MONT.
1452	29 MAY 1972	11:56:16.6	46.787N	121.906W			3.02		7			UW	STATIONS USED= 6, RMS= .19, MAG STD ERR= .20
1453	9 JUN 1972	21:58:57.7	47.742N	121.978W			3.29		15			UW	STATIONS USED= 5, RMS= .09, MAG STD ERR= .18
1454	19 JUN 1972	23:57:57.7	48.121N	121.194W			3.15		10			UW	STATIONS USED= 7, RMS= .13, MAG STD ERR= .17 DEPTH FIXED
1455	25 JUN 1972	01:42:21.9	47.953N	122.127W			3.98		25			UW	STATIONS USED= 7, RMS= .06, MAG STD ERR= .08
1456	28 JUN 1972	18:16:54.6	48.404N	122.475W			3.16		20			UW	STATIONS USED= 7, RMS= .23, MAG STD ERR= .13
1457	5 JUL 1972	10:16:38.4	49.545N	127.213W			5.80MB		27			NO	REPORTED FELT INFORMATION 067 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = ERL MAGNITUDE = 5.7 USING NOAA AVERAGE MS (IASPEI FORMULA)

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG	SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
													MAGNITUDE(FRACTIONAL NOTATION,AVE)=5.50, AUTHORITY-BRK
1458	17 JUL 1972	21:09:36.8	47.541N	122.880W			3.14		22			UW	STATIONS USED= 8, RMS= .06, MAG STD ERR= .08
1459	28 JUL 1972	15:04:01.2	47.758N	122.456W			3.02		26			UW	STATIONS USED= 7, RMS= .05, MAG STD ERR= .12
1460	13 AUG 1972	12:55:15.0	47.407N	121.807W			3.02		18			UW	STATIONS USED= 8, RMS= .10, MAG STD ERR= .11
1461	26 AUG 1972	18:05:01.4	43.218N	127.394W			4.90MB		33		*	NO	HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 014 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = ERL MAGNITUDE = 4.4 USING NOAA AVERAGE MS (IASPEI FORMULA)
1462	27 SEP 1972	01:08:15.9	45.238N	121.635W			3.89HL		5		D	GS	RMS: 0.22,HSE: 17.8,ZSE: 14.7,NSTN: 33,GAP:320,D: 84
1463	4 OCT 1972	12:38:50.5	48.375N	122.242W			3.15		19			UW	STATIONS USED= 8, RMS= .19, MAG STD ERR= .21
1464	16 OCT 1972	22:08:32.1	48.830N	122.122W			3.04		15			UW	STATIONS USED= 7, RMS= .31, MAG STD ERR= .08
1465	22 OCT 1972	09:16:28.3	47.567N	122.211W			3.77		23			UW	STATIONS USED= 8, RMS= .11, MAG STD ERR= .14
1466	25 OCT 1972	01:01:41.0	43.438N	127.732W			5.30MB		33			NO	HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 054 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = ERL MAGNITUDE = 5.2 USING NOAA AVERAGE MS (IASPEI FORMULA)
1467	3 NOV 1972	23:48:31.2	47.721N	122.906W			3.05		48			UW	STATIONS USED= 10, RMS= .20, MAG STD ERR= .10
1468	6 NOV 1972	18:38:39.3	47.294N	122.913W			3.67		23			UW	STATIONS USED= 9, RMS= .18, MAG STD ERR= .05
1469	6 NOV 1972	23:47:18.4	47.892N	114.250W			3.80N'		5			NO	HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSICIST 014 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = ERL LOCAL MAGNITUDE = 3.80 SCALE =ML AUTHORITY= ERL
1470	9 NOV 1972	04:19:18.4	48.449N	123.334W			4.12		52			UW	STATIONS USED= 11, RMS= .17, MAG STD ERR= .14
1471	14 NOV 1972	18:26:24.1	47.744N	122.249W			3.27		22			UW	STATIONS USED= 11, RMS= .12, MAG STD ERR= .18
1472	17 NOV 1972	02:15:23.4	45.880N	122.643W			3.08					UW	STATIONS USED= 9, RMS= .36, MAG STD ERR= .66
1473	24 NOV 1972	23:18:32.7	47.212N	114.005W		IV			33			NO	REPORTED FELT INFORMATION HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 016 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = ERL
1474	3 DEC 1972	10:17:41.8	47.483N	122.760W			3.62		18			UW	STATIONS USED= 11, RMS= .17, MAG STD ERR= .21
1475	6 DEC 1972	10:32:26.7	47.868N	123.443W			3.88		46			UW	STATIONS USED= 11, RMS= .12, MAG STD ERR= .19
1476	6 DEC 1972	17:35:53.6	47.766N	122.457W			3.25		26			UW	STATIONS USED= 11, RMS= .17, MAG STD ERR= .03

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
1477	9 DEC 1972	01:55:34.5	48.590N	122.997W			3.29	11			UW	STATIONS USED= 10, RMS= .25, MAG STD ERR= .12
1478	20 DEC 1972	19:58:41.9	49.783N	114.817W			5.10MB			E	NO	NON-TECTONIC ASSOCIATED PHENOMENA: ACCIDENTAL, CONTROLLED, OR SUSPECTED EXPLOSION 011 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION PARAMETERS OF OTHER EXPLOSIONS , NOT COMPUTED SOLUTION ORIGINAL DATA SOURCE = ERL
1479	16 JAN 1973	03:27:29.9	47.902N	121.945W			3.38	18			UW	STATIONS USED= 10, RMS= .16, MAG STD ERR= .33
1480	28 JAN 1973	11:53:17.5	45.989N	122.109W			3.27	7			UW	STATIONS USED= 10, RMS= .38, MAG STD ERR= .28
1481	22 FEB 1973	04:47:17.2	47.267N	122.853W			3.76	24			UW	STATIONS USED= 11, RMS= .29, MAG STD ERR= .06
1482	4 MAR 1973	02:47:32.0	52.060N	118.070W			4.60ML	18			CA	HYPOCENTER DEPTH ASSIGNED STANDARD ERRORS: T=0, X=0.04, Y=0.03, Z= 0 ORIGINAL DATA SOURCE = EPB 8 STATION RECORDINGS USED IN SOLUTION MAGNITUDE = 3.90 MN MAGNITUDE = 4.60 ML
1483	4 MAR 1973	03:15:44.0	52.040N	118.080W			3.40ML	18			CA	HYPOCENTER DEPTH ASSIGNED STANDARD ERRORS: T=1, X=0.04, Y=0.04, Z= 0 ORIGINAL DATA SOURCE = EPB 5 STATION RECORDINGS USED IN SOLUTION MAGNITUDE = 2.80 MN MAGNITUDE = 3.40 ML
1484	4 MAR 1973	05:02:43.0	52.030N	118.040W			4.30ML	18			CA	HYPOCENTER DEPTH ASSIGNED STANDARD ERRORS: T=0, X=0.05, Y=0.04, Z= 0 ORIGINAL DATA SOURCE = EPB 8 STATION RECORDINGS USED IN SOLUTION MAGNITUDE = 3.50 MN MAGNITUDE = 4.30 ML
1485	16 MAR 1973	06:28:56.0	48.910N	114,800W			3.50ML	18			CA	HYPOCENTER DEPTH ASSIGNED STANDARD ERRORS: T=2, X=0.11, Y=0.15, Z= 0 ORIGINAL DATA SOURCE = EPB 4 STATION RECORDINGS USED IN SOLUTION MAGNITUDE = 3.50 ML
1486	17 MAR 1973	23:17:13.7	47.770N	120.000W			3.00				RU	
1487	22 MAR 1973	21:21:51.0	52.060N	118.010W			4.20ML	18			CA	HYPOCENTER DEPTH ASSIGNED STANDARD ERRORS: T=1, X=0.05, Y=0.04, Z= 0 ORIGINAL DATA SOURCE = EPB 5 STATION RECORDINGS USED IN SOLUTION MAGNITUDE = 3.90 MN MAGNITUDE = 4.20 ML

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG	SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
1488	30 MAR 1973	16:56:30.0	52.030N	118.070W			3.70ML		18			CA	HYPOCENTER DEPTH ASSIGNED STANDARD ERRORS: T=1, X=0.05, Y=0.04, Z= 0 ORIGINAL DATA SOURCE = EPB 5 STATION RECORDINGS USED IN SOLUTION MAGNITUDE = 3.20 MN MAGNITUDE = 3.70 ML
1489	13 APR 1973	07:03:08.9	47.823N	122.762W			3.67		52			UW	STATIONS USED= 11, RMS= .10, MAG STD ERR= .22
1490	19 APR 1973	19:33:45.9	46.312N	122.225W			3.43					UW	STATIONS USED= 9, RMS= .10, MAG STD ERR= .13
1491	27 APR 1973	11:00:19.8	43.618N	127.134W			4.90MB		33		*	NO	HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 018 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = ERL
1492	12 MAY 1973	19:31:21.0	49.610N	127.400W			3.50ML		18			CA	HYPOCENTER DEPTH ASSIGNED STANDARD ERRORS: T=2, X=0.30, Y=0.13, Z= 0 ORIGINAL DATA SOURCE = EPB 5 STATION RECORDINGS USED IN SOLUTION MAGNITUDE = 3.50 ML
1493	25 MAY 1973	11:36:25.9	43.345N	126.767W			4.20MB		33			NO	HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 013 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = ERL
1494	6 JUN 1973	00:12:07.0	48.659N	123.094W			3.05		19			UW	STATIONS USED= 10, RMS= .36, MAG STD ERR= .35
1495	6 JUN 1973	17:22:22.1	43.417N	126.106W			4.50MB		33		*	NO	HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 006 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = ERL
1496	9 JUN 1973	11:11:39.1	47.593N	121.803W			3.30		10			UW	STATIONS USED= 11, RMS= .17, MAG STD ERR= .18
1497	14 JUN 1973	12:54:35.7	47.630N	123.227W			3.04		49			UW	STATIONS USED= 11, RMS= .16, MAG STD ERR= .18
1498	16 JUN 1973	14:43:47.5	44.980N	125.774W			5.60MB		33			NO	REPORTED FELT INFORMATION HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 115 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = ERL MAGNITUDE = 5.1 USING NOAA AVERAGE MS (IASPEI FORMULA)
1499	18 JUN 1973	08:20:37.6	43.477N	126.600W			4.80MB		33		*	NO	HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 033 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = ERL MAGNITUDE = 4.1 USING NOAA AVERAGE MS (IASPEI FORMULA)
1500	22 JUN 1973	21:27:16.0	49.860N	114.710W			3.00ML		18			CA	HYPOCENTER DEPTH ASSIGNED STANDARD ERRORS: T=1, X=0.07, Y=0.08, Z= 0

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG	SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
													ORIGINAL DATA SOURCE = EPB 3 STATION RECORDINGS USED IN SOLUTION MAGNITUDE = 3.00 ML
1501	13 JUL 1973	02:59:30.1	49.115N	127.840W			4.80MB		33		*	NO	HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 011 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = GS
1502	18 JUL 1973	21:58:05.4	46.832N	121.828W			3.90		8			UW	STATIONS USED= 12, RMS= .23, MAG STD ERR= .10
1503	12 AUG 1973	15:11:20.0	47.638N	123.568W			3.46		51			UW	STATIONS USED= 13, RMS= .20, MAG STD ERR= .21
1504	2 SEP 1973	01:39:41.2	43.727N	127.479W			4.60MB		22		*	NO	013 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = GS
1505	4 SEP 1973	17:56:49.2	48.232N	121.158W			3.67					UW	STATIONS USED= 14, RMS= .35, MAG STD ERR= .22
1506	7 OCT 1973	13:53:10.3	47.602N	122.323W			3.27		8			UW	STATIONS USED= 11, RMS= .11, MAG STD ERR= .40
1507	12 OCT 1973	05:54:27.7	43.736N	127.469W			5.40MB		6			NO	061 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = GS MAGNITUDE = 5.2 USING NOAA AVERAGE MS (IASPEI FORMULA)
1508	22 NOV 1973	22:09:24.4	43.473N	126.788W			4.50MB		17		*	NO	014 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = GS
1509	20 DEC 1973	01:08:28.2	46.868N	119.353W			4.38MC		2			UW	
1510	5 JAN 1974	15:16:14.1	42.298N	126.606W			4.00MB		33		*	NO	HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 8 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = GS
1511	5 JAN 1974	15:24:05.0	42.318N	126.865W			4.30MB		33		*	NO	HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 6 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = GS
1512	5 JAN 1974	15:30:24.2	42.555N	126.454W			4.00MB		33		*	NO	HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 11 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = GS
1513	5 JAN 1974	15:37:33.7	42.632N	126.423W			4.60MB		33			NO	HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 25 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = GS MAGNITUDE = 4.7 USING NOAA AVERAGE MS (IASPEI FORMULA)

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG SH	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
1514	5 JAN 1974	15:54:03.3	42.475N	126.597W			4.90MB	33			NO	HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 70 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = GS MAGNITUDE = 5.1 USING NOAA AVERAGE MS (IASPEI FORMULA)
1515	5 JAN 1974	16:25:56.1	42.369N	126.597W			4.20MB	33		*	NO	HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 5 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = GS
1516	5 JAN 1974	17:43:02.1	42.576N	126.333W			4.30MB	33		*	NO	HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 15 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = GS MAGNITUDE = 3.9 USING NOAA AVERAGE MS (IASPEI FORMULA)
1517	5 JAN 1974	23:23:56.7	42.520N	126.602W			4.40MB	33		*	NO	HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 15 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = GS MAGNITUDE = 4.0 USING NOAA AVERAGE MS (IASPEI FORMULA)
1518	5 JAN 1974	23:29:18.6	42.585N	126.580W			5.00MB	22			NO	43 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = GS MAGNITUDE = 4.6 USING NOAA AVERAGE MS (IASPEI FORMULA)
1519	6 JAN 1974	12:33:35.3	47.766N	122.835W			3.07	50			UW	STATIONS USED= 13, RMS= .20, MAG STD ERR= .28
1520	6 JAN 1974	14:41:13.0	52.090N	118.060W			3.70ML	15			CA	HYPOCENTER DEPTH ASSIGNED STANDARD ERRORS: T=1, X=0.06, Y=0.04, Z= 0 ORIGINAL DATA SOURCE = EPB 8 STATION RECORDINGS USED IN SOLUTION MAGNITUDE = 3.10 MN MAGNITUDE = 3.70 ML
1521	6 JAN 1974	16:33:30.0	52.090N	118.110W			3.20ML	14			CA	HYPOCENTER DEPTH ASSIGNED STANDARD ERRORS: T=0, X=0.04, Y=0.03, Z= 0 ORIGINAL DATA SOURCE = EPB 5 STATION RECORDINGS USED IN SOLUTION MAGNITUDE = 2.60 MN MAGNITUDE = 3.20 ML
1522	17 JAN 1974	08:48:02.0	49.120N	116.620W			3.00ML	18			CA	HYPOCENTER DEPTH ASSIGNED STANDARD ERRORS: T=2, X=0.13, Y=0.19, Z= 0 ORIGINAL DATA SOURCE = EPB 3 STATION RECORDINGS USED IN SOLUTION MAGNITUDE = 3.00 ML
1523	12 FEB 1974	03:04:53.0	50.210N	127.610W			3.40ML	18			CA	HYPOCENTER DEPTH ASSIGNED STANDARD ERRORS: T=2, X=0.14, Y=0.06, Z= 0 ORIGINAL DATA SOURCE = EPB

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG	SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
													4 STATION RECORDINGS USED IN SOLUTION MAGNITUDE = 3.40 ML
1524	13 FEB 1974	15:45:14.0	49.900N	126.830W			3.10ML		18				CA HYPOCENTER DEPTH ASSIGNED STANDARD ERRORS: T=2, X=0.13, Y=0.08, Z= 0 ORIGINAL DATA SOURCE = EPB 4 STATION RECORDINGS USED IN SOLUTION MAGNITUDE = 3.10 ML
1525	4 MAR 1974	18:17:34.1	43.541N	126.892W			5.00MB		33				NO HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 18 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = GS
1526	23 MAR 1974	19:09:40.9	42.681N	126.094W			4.50MB		33			*	NO HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 12 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = GS
1527	28 MAR 1974	01:56:26.9	42.597N	126.390W			4.60MB		33			*	NO HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 12 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = GS
1528	20 APR 1974	03:00:10.5	46.813N	121.611W			4.65		2				UW STATIONS USED= 10, RMS= .33, MAG STD ERR= .22
1529	21 APR 1974	14:08:54.5	46.761N	121.556W			3.48		6				UW STATIONS USED= 11, RMS= .28, MAG STD ERR= .50
1530	29 APR 1974	16:15:00.2	43.376N	126.667W			4.50MB		33			*	NO HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 28 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = GS
1531	15 MAY 1974	20:52:42.0	52.290N	115.160W			3.60MN		18				CA HYPOCENTER DEPTH ASSIGNED STANDARD ERRORS: T=1, X=0.05, Y=0.04, Z= 0 ORIGINAL DATA SOURCE = EPB 10 STATION RECORDINGS USED IN SOLUTION MAGNITUDE = 3.60 MN
1532	16 MAY 1974	13:04:36.4	48.104N	122.984W			4.17		53				UW STATIONS USED= 11, RMS= .12, MAG STD ERR= .28
1533	21 MAY 1974	15:47:25.9	46.214N	122.195W			3.51		11				UW STATIONS USED= 9, RMS= .23, MAG STD ERR= .44
1534	22 MAY 1974	11:58:18.3	48.608N	122.970W			3.11		14				UW STATIONS USED= 12, RMS= .26, MAG STD ERR= .30
1535	25 MAY 1974	06:59:20.8	47.956N	121.886W			3.30		22				UW STATIONS USED= 13, RMS= .20, MAG STD ERR= .00
1536	30 MAY 1974	01:00:02.0	49.280N	127.650W			3.80ML		18				CA HYPOCENTER DEPTH ASSIGNED STANDARD ERRORS: T=2, X=0.18, Y=0.13, Z= 0 ORIGINAL DATA SOURCE = EPB 13 STATION RECORDINGS USED IN SOLUTION MAGNITUDE = 3.80 ML

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
1537	8 JUN 1974	14:13:27.5	42.777N	126.150W			4.10MB	33		*	NO	5 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = GS
1538	6 JUL 1974	18:18:41.0	51.220N	115.680W			3.10MN	18			CA	HYPOCENTER DEPTH ASSIGNED STANDARD ERRORS: T=1, X=0.08, Y=0.08, Z= 0 ORIGINAL DATA SOURCE = EPB 6 STATION RECORDINGS USED IN SOLUTION MAGNITUDE = 3.10 MN
1539	20 JUL 1974	19:15:57.0	49.700N	127.040W			4.20ML	18			CA	HYPOCENTER DEPTH ASSIGNED STANDARD ERRORS: T=1, X=0.08, Y=0.05, Z= 0 ORIGINAL DATA SOURCE = EPB 13 STATION RECORDINGS USED IN SOLUTION MAGNITUDE = 4.20 ML
1540	26 JUL 1974	23:36:03.0	48.717N	114.888W			3.70N'	13			NO	19 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = GS LOCAL MAGNITUDE = 3.70 SCALE =ML AUTHORITY= GS
1541	18 AUG 1974	19:23:29.5	43.788N	127.229W			4.10MB	33		*	NO	HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 8 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = GS
1542	20 SEP 1974	11:33:49.0	50.100N	127.790W			3.50ML	10			CA	HYPOCENTER DEPTH ASSIGNED STANDARD ERRORS: T=2, X=0.14, Y=0.05, Z= 0 ORIGINAL DATA SOURCE = EPB 4 STATION RECORDINGS USED IN SOLUTION MAGNITUDE = 3.50 ML
1543	18 OCT 1974	19:36:48.9	43.479N	126.392W			4.00MB	33		*	NO	HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 6 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = GS
1544	19 OCT 1974	22:09:42.5	43.290N	126.490W			4.50MB	33		*	NO	HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 12 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = GS
1545	21 OCT 1974	13:21:00.1	43.602N	126.606W			4.30MB	33		*	NO	HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 7 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = GS
1546	28 OCT 1974	09:38:39.4	48.174N	127.684W			4.20MB	33		*	NO	HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 10 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = GS

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
1547	1 NOV 1974	20:22:58.6	48.677N	123.214W			3.50	58			UW	STATIONS USED= 13, RMS= .17, MAG STD ERR= .22
1548	17 NOV 1974	13:45:09.3	43.709N	127.124W			4.00MB	33		*	NO	HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 9 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = GS
1549	17 NOV 1974	15:27:59.4	43.498N	127.036W			5.10MB	12			NO	50 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = GS
1550	25 NOV 1974	02:43:14.0	49.840N	127.220W			3.30ML	18			CA	HYPOCENTER DEPTH ASSIGNED STANDARD ERRORS: T=2, X=0.13, Y=0.07, Z= 0 ORIGINAL DATA SOURCE = EPB 4 STATION RECORDINGS USED IN SOLUTION MAGNITUDE = 3.30 ML
1551	13 DEC 1974	03:28:54.2	45.265N	121.599W		IV	4.10MB	22			NO	REPORTED FELT INFORMATION 32 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = GS LOCAL MAGNITUDE = 4.00 SCALE =ML AUTHORITY= GS
1552	15 DEC 1974	02:25:19.0	42.518N	126.583W			4.20MB	33		*	NO	HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 8 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = GS
1553	17 JAN 1975	04:18:56.1	47.442N	114.353W			4.40MB	5			NO	REPORTED FELT INFORMATION HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSICIST 30 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = GS
1554	29 JAN 1975	04:42:14.0	49.700N	119.710W			3.10ML	10			CA	DEPTH RESTRAINED. 5 STATIONS USED IN SOLUTION. ORIGINAL DATA SOURCE = EPB
1555	31 JAN 1975	08:10:00.0	44.732N	116.438W		IV					UE	WEST YELLOWSTONE, MONT. SEVERAL AFTERSHOCKS FELT
1556	31 JAN 1975	08:54:45.1	48.174N	114.142W			4.10MB	5			NO	REPORTED FELT INFORMATION HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSICIST 35 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = GS LOCAL MAGNITUDE = 3.80 SCALE =ML AUTHORITY= GS
1557	2 FEB 1975	02:06:08.0	48.170N	114.140W			3.20NT	18			CA	DEPTH RESTRAINED. 4 STATIONS USED IN SOLUTION. ORIGINAL DATA SOURCE = EPB
1558	4 FEB 1975	01:32:52.1	48.213N	114.110W		VI	4.60MB	8			NO	REPORTED DAMAGE 50 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = GS

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG SN	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
												LOCAL MAGNITUDE = 5.00 SCALE =ML AUTHORITY= GS
1559	17 FEB 1975	09:18:26.1	43.565N	126.885W			4.60MB	33			NO	HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 19 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = GS MAGNITUDE = 4.1 USING NOAA AVERAGE MS (IASPEI FORMULA)
1560	1 MAR 1975	16:29:17.4	43.320N	126.222W			4.40MB	33			NO	HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 10 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = GS
1561	17 MAR 1975	21:06:07.2	50.208N	114.862W			4.10MB				NO	NON-TECTONIC ASSOCIATED PHENOMENA: ACCIDENTAL, CONTROLLED, OR SUSPECTED EXPLOSION 16 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = GS
1562	19 MAR 1975	12:09:28.4	49.314N	127.350W			4.20MB	33		*	NO	HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 11 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = GS
1563	31 MAR 1975	05:48:38.0	49.270N	125.960W			5.40ML	18			CA	DEPTH RESTRAINED. 23 STATIONS USED IN SOLUTION. ORIGINAL DATA SOURCE = EPB
1564	10 APR 1975	10:57:16.7	46.929N	121.594W			3.70MB	2		W	NO	30 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = GS PARAMETERS OF EPICENTER FROM UNIV. WASHINGTON, SEATTLE LOCAL MAGNITUDE = 3.50 SCALE =ML AUTHORITY= GS
1565	16 APR 1975	19:09:29.0	47.570N	122.905W		V	4.00N'	47.		W	NO	REPORTED FELT INFORMATION 20 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = GS PARAMETERS OF EPICENTER FROM UNIV. WASHINGTON, SEATTLE MAGNITUDE(FRACTIONAL NOTATION,AVE)=4.00, AUTHORITY-SEA LOCAL MAGNITUDE = 3.30 SCALE =ML AUTHORITY= GS
1566	18 APR 1975	04:57:56.6	46.943N	121.639W		III	3.90MD	5		W	NO	REPORTED FELT INFORMATION 25 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = GS PARAMETERS OF EPICENTER FROM UNIV. WASHINGTON, SEATTLE LOCAL MAGNITUDE = 3.90 SCALE =CL AUTHORITY= SEA
1567	23 APR 1975	01:03:42.4	47.076N	122.647W		VI	4.00MB	46		W	NO	REPORTED DAMAGE 40 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = GS PARAMETERS OF EPICENTER FROM UNIV. WASHINGTON, SEATTLE LOCAL MAGNITUDE = 3.80 SCALE =ML AUTHORITY= GS
1568	3 JUN 1975	09:43:54.5	44.895N	115.298W			3.30MB	5			NO	HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSICIST 13 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = GS

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
1569	5 JUN 1975	04:47:54.0	48.810N	124.370W			3.00ML	18			CA	DEPTH RESTRAINED. 3 STATIONS USED IN SOLUTION. ORIGINAL DATA SOURCE = EPB
1570	15 JUN 1975	17:51:31.5	46.237N	119.103W			3.12MC				UW	FELT
1571	28 JUN 1975	16:33:43.7	46.129N	119.702W			3.30MC	11			UW	
1572	28 JUN 1975	22:17:52.6	46.118N	119.697W			3.81MC	10			UW	FELT
1573	1 JUL 1975	05:28:02.2	45.627N	120.001W			3.59MC	2			UW	
1574	7 JUL 1975	20:41:17.8	46.074N	118.449W			3.18MC	3			UW	
1575	14 JUL 1975	05:50:34.6	47.325N	122.407W		V	3.45N'	7		W	NO	REPORTED FELT INFORMATION 17 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = GS PARAMETERS OF EPICENTER FROM UNIV. WASHINGTON, SEATTLE LOCAL MAGNITUDE = 3.45 SCALE =CL AUTHORITY= SEA
1576	17 JUL 1975	07:33:56.9	43.799N	126.774W			3.90MB	33		*	NO	HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 7 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = GS
1577	24 JUL 1975	05:39:57.1	43.204N	126.214W			4.90MB	33		*	NO	HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 16 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = GS
1578	24 JUL 1975	11:42:11.8	47.323N	122.407W		V	3.40N'	6		W	NO	REPORTED FELT INFORMATION 20 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = GS PARAMETERS OF EPICENTER FROM UNIV. WASHINGTON, SEATTLE LOCAL MAGNITUDE = 3.40 SCALE =CL AUTHORITY= SEA
1579	25 JUL 1975	04:13:21.5	43.615N	127.017W			4.50MB	33			NO	HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 35 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = GS MAGNITUDE = 3.8 USING NOAA AVERAGE MS (IASPEI FORMULA)
1580	27 JUL 1975	04:15:41.0	43.678N	127.156W			4.70MB	31			NO	38 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = GS MAGNITUDE = 4.2 USING NOAA AVERAGE MS (IASPEI FORMULA)
1581	29 JUL 1975	01:48:16.2	43.687N	126.103W			5.20MB	33			NO	HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 68 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = GS MAGNITUDE = 3.8 USING NOAA AVERAGE MS (IASPEI FORMULA)

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1582	6 AUG 1975	21:38:07.8	43.088N	126.195W			4.90MB	33		*	NO	HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 18 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = GS
1583	18 SEP 1975	12:19:28.5	47.796N	118.231W			3.50MC	1			UW	
1584	25 SEP 1975	06:26:40.2	43.401N	126.869W			4.20MB	33		*	NO	HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 7 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = GS MAGNITUDE = 3.4 USING NOAA AVERAGE MS (IASPEI FORMULA)
1585	25 SEP 1975	21:23:53.0	48.110N	122.450W			3.10ML	18			CA	DEPTH RESTRAINED. 4 STATIONS USED IN SOLUTION. ORIGINAL DATA SOURCE = EPB
1586	3 OCT 1975	22:31:26.0	48.650N	122.830W			3.00ML	18			CA	DEPTH RESTRAINED. 5 STATIONS USED IN SOLUTION. ORIGINAL DATA SOURCE = EPB
1587	14 OCT 1975	11:54:15.0	47.350N	124.420W			3.10ML	18			CA	DEPTH RESTRAINED. 3 STATIONS USED IN SOLUTION. ORIGINAL DATA SOURCE = EPB
1588	20 OCT 1975	14:17:54.8	48.202N	114.275W			4.30MB	25			NO	HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSICIST 19 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = GS
1589	22 NOV 1975	22:54:03.1	43.418N	126.750W			4.30MB	33		*	NO	HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 11 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = GS MAGNITUDE = 4.0 USING NOAA AVERAGE MS (IASPEI FORMULA)
1590	24 NOV 1975	13:00:22.0	46.400N	126.590W			3.30ML	18			CA	DEPTH RESTRAINED. 3 STATIONS USED IN SOLUTION. ORIGINAL DATA SOURCE = EPB
1591	29 NOV 1975	10:50:30.0	49.430N	126.790W			4.40ML	18			CA	DEPTH RESTRAINED. 14 STATIONS USED IN SOLUTION. ORIGINAL DATA SOURCE = EPB
1592	30 NOV 1975	10:48:21.0	49.230N	123.620W			4.90ML	10			CA	DEPTH RESTRAINED. 23 STATIONS USED IN SOLUTION. ORIGINAL DATA SOURCE = EPB
1593	30 NOV 1975	10:51:49.0	49.230N	123.630W			3.20ML	18			CA	DEPTH RESTRAINED. 3 STATIONS USED IN SOLUTION. ORIGINAL DATA SOURCE = EPB

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1594	11 DEC 1975	15:02:45.0	49.240N	123.780W			3.80ML	18			CA	DEPTH RESTRAINED. 9 STATIONS USED IN SOLUTION. ORIGINAL DATA SOURCE = EPB
1595	12 DEC 1975	15:40:54.0	46.310N	126.470W			3.20ML	18			CA	DEPTH RESTRAINED. 3 STATIONS USED IN SOLUTION. ORIGINAL DATA SOURCE = EPB
1596	13 DEC 1975	11:27:43.0	46.280N	126.370W			3.60ML	18			CA	DEPTH RESTRAINED. 3 STATIONS USED IN SOLUTION. ORIGINAL DATA SOURCE = EPB
1597	26 DEC 1975	04:44:09.5	44.597N	115.150W			3.50MB	5		*		NO HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSICIST 19 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = GS MAGNITUDE(FRACTIONAL NOTATION,AVE)=3.30, AUTHORITY-ERD LOCAL MAGNITUDE = 2.90 SCALE =ML AUTHORITY= GS
1598	26 DEC 1975	04:46:47.2	44.552N	115.218W			3.80N'	5		*		NO HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSICIST 11 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = GS MAGNITUDE(FRACTIONAL NOTATION,AVE)=3.80, AUTHORITY-ERD LOCAL MAGNITUDE = 3.10 SCALE =ML AUTHORITY= GS
1599	4 JAN 1976	14:04:35.0	49.270N	123.640W			3.10ML	18			CA	DEPTH RESTRAINED. 3 STATIONS USED IN SOLUTION. ORIGINAL DATA SOURCE = EPB
1600	5 JAN 1976	13:25:43.8	47.460N	122.599W		IV	2.90N'	42		W		NO REPORTED FELT INFORMATION 13 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = GS PARAMETERS OF EPICENTER FROM UNIV. WASHINGTON, SEATTLE LOCAL MAGNITUDE = 2.90 SCALE =CL AUTHORITY= SEA
1601	10 JAN 1976	08:58:45.2	43.531N	127.431W			5.40MB	33				NO HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 51 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = GS
1602	13 JAN 1976	17:09:31.3	44.463N	117.730W			3.80N'	5		*		NO HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSICIST 6 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = GS LOCAL MAGNITUDE = 3.80 SCALE =ML AUTHORITY= AEC
1603	14 JAN 1976	06:06:55.8	44.130N	127.958W			4.50MB	33		*		NO HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 9 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = GS

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
1604	18 JAN 1976	08:38:01.2	48.587N	125.551W			3.90N'	10		W	NO	REPORTED FELT INFORMATION 25 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = GS PARAMETERS OF EPICENTER FROM UNIV. WASHINGTON, SEATTLE LOCAL MAGNITUDE = 3.90 SCALE =ML AUTHORITY= OTT
1605	21 JAN 1976	13:43:29.6	48.221N	114.095W		IV	3.10N'	5			NO	REPORTED FELT INFORMATION HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSICIST 21 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = GS LOCAL MAGNITUDE = 3.10 SCALE =ML AUTHORITY= GS
1606	24 JAN 1976	16:08:55.0	52.180N	115.220W			3.10NT	5			CA	DEPTH RESTRAINED. 8 STATIONS USED IN SOLUTION. ORIGINAL DATA SOURCE = EPB
1607	26 JAN 1976	19:36:51.0	52.200N	115.200W			3.00NT	5			CA	DEPTH RESTRAINED. 7 STATIONS USED IN SOLUTION. ORIGINAL DATA SOURCE = EPB
1608	27 JAN 1976	03:09:31.3	47.875N	122.171W		IV	2.75N'	19		W	NO	REPORTED FELT INFORMATION 21 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = GS PARAMETERS OF EPICENTER FROM UNIV. WASHINGTON, SEATTLE LOCAL MAGNITUDE = 2.75 SCALE =CL AUTHORITY= SEA
1609	27 JAN 1976	16:06:47.5	43.571N	127.408W			5.20MB	33		*	NO	HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 103 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = GS MAGNITUDE = 4.9 USING NOAA AVERAGE MS (IASPEI FORMULA) LOCAL MAGNITUDE = 5.00 SCALE =ML AUTHORITY= BRK
1610	29 JAN 1976	18:45:54.3	43.560N	127.248W			5.20MB	33		*	NO	HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 102 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = GS MAGNITUDE = 4.7 USING NOAA AVERAGE MS (IASPEI FORMULA)
1611	31 JAN 1976	12:27:14.0	48.348N	122.319W		IV	3.00N'	18			NO	REPORTED FELT INFORMATION 16 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = GS PARAMETERS OF EPICENTER FROM UNIV. WASHINGTON, SEATTLE LOCAL MAGNITUDE = 3.00 SCALE =CL AUTHORITY= SEA
1612	10 MAR 1976	02:29:59.0	47.820N	115.820W			3.10ML	18			CA	DEPTH RESTRAINED. 3 STATIONS USED IN SOLUTION. ORIGINAL DATA SOURCE = EPB
1613	10 MAR 1976	03:54:51.0	49.260N	123.690W			3.60ML	18			CA	DEPTH RESTRAINED. 8 STATIONS USED IN SOLUTION.

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
												ORIGINAL DATA SOURCE = EPB
1614	16 MAR 1976	11:54:42.5	43.856N	127.995W			4.30MB	33		*	NO	HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 24 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = GS MAGNITUDE = 3.6 USING NOAA AVERAGE MS (IASPEI FORMULA)
1615	13 APR 1976	00:47:17.1	45.221N	120.771W		VI	4.50MB	15			NO	REPORTED DAMAGE HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSICIST 96 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = GS ISOSEISMAL MAP PUBLISHED BY P MAGNITUDE = 3.3 USING NOAA AVERAGE MS (IASPEI FORMULA) LOCAL MAGNITUDE = 4.80 SCALE =ML AUTHORITY= GS
1616	17 APR 1976	02:11:44.4	45.080N	120.797W			4.20N'	15			NO	REPORTED FELT INFORMATION HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSICIST 42 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = GS LOCAL MAGNITUDE = 4.20 SCALE =ML AUTHORITY= GS
1617	22 APR 1976	04:21:39.1	43.636N	127.005W			4.20MB	33		*	NO	HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 27 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = GS MAGNITUDE = 3.4 USING NOAA AVERAGE MS (IASPEI FORMULA)
1618	24 APR 1976	08:49:12.0	48.255N	114.089W			3.50N'	5			NO	REPORTED FELT INFORMATION HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSICIST 23 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = GS MAGNITUDE(FRACTIONAL NOTATION,AVE)=3.50, AUTHORITY-MSO LOCAL MAGNITUDE = 2.90 SCALE =ML AUTHORITY= GS
1619	25 APR 1976	11:20:11.0	49.410N	127.110W			4.40ML	18			CA	DEPTH RESTRAINED. 8 STATIONS USED IN SOLUTION. ORIGINAL DATA SOURCE = EPB
1620	28 APR 1976	08:39:58.5	47.787N	122.336W			3.00N'	33		W	NO	15 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = GS PARAMETERS OF EPICENTER FROM UNIV. WASHINGTON, SEATTLE LOCAL MAGNITUDE = 3.00 SCALE =CL AUTHORITY= SEA
1621	15 MAY 1976	13:04:53.6	47.706N	120.033W			3.05MC	5			UW	
1622	16 MAY 1976	08:35:15.0	48.800N	123.340W			5.40ML	18			CA	DEPTH RESTRAINED. 32 STATIONS USED IN SOLUTION. ORIGINAL DATA SOURCE = EPB
1623	6 JUN 1976	02:17:18.0	49.040N	127.860W			5.00ML	18			CA	DEPTH RESTRAINED. 23 STATIONS USED IN SOLUTION.

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
												ORIGINAL DATA SOURCE = EPB
1624	6 JUN 1976	02:35:31.0	49.150N	127.830W			3.40ML	18			CA	DEPTH RESTRAINED. 6 STATIONS USED IN SOLUTION. ORIGINAL DATA SOURCE = EPB
1625	15 JUN 1976	14:57:31.8	44.638N	114.574W			3.70N'	5			NO	HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSICIST 14 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = GS LOCAL MAGNITUDE = 3.70 SCALE =ML AUTHORITY= GS
1626	26 JUN 1976	11:12:55.3	43.760N	127.752W			4.60MB	33		*	NO	HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 14 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = GS
1627	1 JUL 1976	19:06:19.0	49.540N	127.330W			3.10ML	18			CA	DEPTH RESTRAINED. 5 STATIONS USED IN SOLUTION. ORIGINAL DATA SOURCE = EPB
1628	23 JUL 1976	17:59:36.8	46.079N	118.745W			3.05MC	3			UW	
1629	26 JUL 1976	10:45:28.2	45.022N	114.179W		V	4.30MB	10			NO	REPORTED FELT INFORMATION HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSICIST 51 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = GS LOCAL MAGNITUDE = 4.40 SCALE =ML AUTHORITY= GS
1630	30 JUL 1976	14:11:03.7	49.079N	127.923W			4.30MB	10		*	NO	HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSICIST 34 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = GS
1631	12 AUG 1976	06:28:60.0	50.640N	123.050W		III	3.80ML	18			CA	REPORTED FELT INFORMATION DEPTH RESTRAINED. 14 STATIONS USED IN SOLUTION. ORIGINAL DATA SOURCE = EPB
1632	28 AUG 1976	22:14:43.5	43.580N	127.134W			4.70MB	33		*	NO	HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 23 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = GS MAGNITUDE = 3.7 USING NOAA AVERAGE MS (IASPEI FORMULA)
1633	30 AUG 1976	16:34:01.5	47.649N	120.177W			3.05MC	3			UW	
1634	1 SEP 1976	22:45:01.0	52.890N	116.100W			3.00NT	5			CA	DEPTH RESTRAINED. 7 STATIONS USED IN SOLUTION. ORIGINAL DATA SOURCE = EPB
1635	2 SEP 1976	13:36:11.0	48.205N	122.761W		V	4.30MB	24		W	NO	REPORTED FELT INFORMATION 33 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG SM	H (KM)	DIS (KM)	Q S	LOCATION AND COMMENTS
											ORIGINAL DATA SOURCE = GS PARAMETERS OF EPICENTER FROM UNIV. WASHINGTON, SEATTLE MAGNITUDE(FRACTIONAL NOTATION,AVE)=4.00, AUTHORITY- GS LOCAL MAGNITUDE = 4.00 SCALE =CL AUTHORITY= SEA
1636	5 SEP 1976	07:13:55.8	43.357N	126.028W			3.80MB	15		* NO	HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSICIST 8 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = GS
1637	8 SEP 1976	08:21:01.6	47.382N	123.084W		VI	4.60MB	48		W NO	REPORTED DAMAGE 82 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = GS PARAMETERS OF EPICENTER FROM UNIV. WASHINGTON, SEATTLE MAGNITUDE = 3.9 USING NOAA AVERAGE MS (IASPEI FORMULA) MAGNITUDE(FRACTIONAL NOTATION,AVE)=4.80, AUTHORITY- GS LOCAL MAGNITUDE = 4.50 SCALE =CL AUTHORITY= SEA
1638	30 SEP 1976	17:36:02.6	43.452N	126.965W			5.20MB	33		* NO	HYPOCENTER SOLUTION HELD AT 33 KM (NORMAL DEPTH) 18 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = GS
1639	4 OCT 1976	08:24:56.1	44.318N	115.016W			3.20N'	5		* NO	HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSICIST 8 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = GS LOCAL MAGNITUDE = 3.20 SCALE =ML AUTHORITY= ERD
1640	14 OCT 1976	21:39:17.7	46.655N	122.343W		V	3.10N'	30		W NO	REPORTED FELT INFORMATION 15 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = GS PARAMETERS OF EPICENTER FROM UNIV. WASHINGTON, SEATTLE LOCAL MAGNITUDE = 3.10 SCALE =ML AUTHORITY= GS
1641	15 OCT 1976	15:33:30.0	52.200N	115.230W			3.20NT	5		CA	DEPTH RESTRAINED. 6 STATIONS USED IN SOLUTION. ORIGINAL DATA SOURCE = EPB
1642	1 NOV 1976	22:22:51.1	44.263N	114.973W			3.70N'	5		NO	REPORTED FELT INFORMATION HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSICIST 7 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = GS LOCAL MAGNITUDE = 3.70 SCALE =ML AUTHORITY= ERD
1643	17 NOV 1976	23:24:32.0	49.440N	126.150W			4.30ML	18		CA	DEPTH RESTRAINED. 14 STATIONS USED IN SOLUTION. ORIGINAL DATA SOURCE = EPB
1644	2 DEC 1976	03:35:47.0	52.290N	115.450W			3.00ML	5		CA	DEPTH RESTRAINED. 3 STATIONS USED IN SOLUTION. ORIGINAL DATA SOURCE = EPB

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
1645	13 DEC 1976	08:47:29.4	47.643N	120.129W			3.10MC	6			UW	FELT
1646	19 DEC 1976	19:00:59.5	42.752N	125.603W			5.40MB	15		*		NO HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSICIST 9 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = GS
1647	23 DEC 1976	05:51:37.0	47.900N	123.100W			3.10ML	18			CA	DEPTH RESTRAINED. 6 STATIONS USED IN SOLUTION. ORIGINAL DATA SOURCE = EPB
1648	29 DEC 1976	06:59:35.1	44.488N	115.819W			3.60N'	5		*		NO HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSICIST 5 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = GS LOCAL MAGNITUDE = 3.60 SCALE =ML AUTHORITY= ERD
1649	29 DEC 1976	08:03:43.2	43.438N	126.785W			5.00MB	15		*		NO HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSICIST 18 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = GS
1650	5 JAN 1977	23:27:43.0	52.240N	115.110W			3.90NT	5			CA	DEPTH RESTRAINED. 8 STATIONS USED IN SOLUTION. ORIGINAL DATA SOURCE = EPB
1651	6 JAN 1977	02:44:02.0	52.270N	115.190W			3.70NT	5			CA	DEPTH RESTRAINED. 7 STATIONS USED IN SOLUTION. ORIGINAL DATA SOURCE = EPB
1652	27 JAN 1977	07:47:29.2	46.939N	119.592W			3.18MC	1			UW	
1653	11 MAR 1977	22:50:11.4	45.895N	119.675W			3.12MC				UW	
1654	30 MAR 1977	17:42:01.0	49.010N	125.240W			3.10ML	18			CA	DEPTH RESTRAINED. 7 STATIONS USED IN SOLUTION. ORIGINAL DATA SOURCE = EPB
1655	11 APR 1977	03:14:37.9	42.526N	126.219W			4.70MB	15		*		NO HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSICIST 5 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = GS
1656	23 APR 1977	17:54:43.4	42.002N	126.737W			4.80MB	15		*		NO HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSICIST 29 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = GS
1657	16 MAY 1977	06:34:54.6	44.416N	114.420W			3.10N'	5		*		NO HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSICIST 10 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG SM	H (KM)	DIS (KM)	Q S	LOCATION AND COMMENTS
											ORIGINAL DATA SOURCE = GS LOCAL MAGNITUDE = 3.10 SCALE =ML AUTHORITY= ERD
1658	26 MAY 1977	06:49:51.0	51.150N	124.430W			3.50ML	18		CA	DEPTH RESTRAINED. 8 STATIONS USED IN SOLUTION. ORIGINAL DATA SOURCE = EPB
1659	12 JUN 1977	02:57:06.0	51.540N	118.460W			3.60ML	18		CA	DEPTH RESTRAINED. 9 STATIONS USED IN SOLUTION. ORIGINAL DATA SOURCE = EPB
1660	17 JUN 1977	06:16:01.8	47.736N	122.712W		V	3.30N'	25		W	NO REPORTED FELT INFORMATION 19 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = GS PARAMETERS OF EPICENTER FROM UNIV. WASHINGTON, SEATTLE LOCAL MAGNITUDE = 3.30 SCALE =ML AUTHORITY= GS
1661	23 JUN 1977	23:26:47.0	49.090N	123.380W			3.50ML	24		CA	7 STATIONS USED IN SOLUTION. ORIGINAL DATA SOURCE = EPB
1662	10 JUL 1977	07:19:30.3	48.532N	122.447W		V	4.30MB	11		W	NO REPORTED FELT INFORMATION 14 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = GS PARAMETERS OF EPICENTER FROM UNIV. WASHINGTON, SEATTLE LOCAL MAGNITUDE = 3.40 SCALE =ML AUTHORITY= GS
1663	13 JUL 1977	07:15:06.2	47.060N	120.952W			3.83MC			UW	FELT
1664	16 JUL 1977	19:06:21.3	43.702N	127.602W			4.60MB	15		*	NO HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSICIST 25 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = GS
1665	24 JUL 1977	09:07:29.0	52.180N	115.190W			3.50NT	5		CA	DEPTH RESTRAINED. 7 STATIONS USED IN SOLUTION. ORIGINAL DATA SOURCE = EPB
1666	24 JUL 1977	17:49:56.0	52.180N	115.220W			3.40NT	5		CA	DEPTH RESTRAINED. 6 STATIONS USED IN SOLUTION. ORIGINAL DATA SOURCE = EPB
1667	25 JUL 1977	21:04:03.8	48.071N	122.852W		V	3.20N'	55		W	NO REPORTED FELT INFORMATION 14 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = GS PARAMETERS OF EPICENTER FROM UNIV. WASHINGTON, SEATTLE LOCAL MAGNITUDE = 3.20 SCALE =ML AUTHORITY= GS
1668	27 JUL 1977	02:17:42.0	52.230N	115.260W			3.20NT	5		CA	DEPTH RESTRAINED. 8 STATIONS USED IN SOLUTION. ORIGINAL DATA SOURCE = EPB

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG SH	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
1669	13 AUG 1977	10:13:07.6	44.654N	114.614W			3.30N'	5		*		NO HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSICIST 14 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = GS LOCAL MAGNITUDE = 3.30 SCALE =ML AUTHORITY= ERD
1670	14 AUG 1977	21:43:36.0	52.280N	115.190W			3.70NT	5			CA	DEPTH RESTRAINED. 11 STATIONS USED IN SOLUTION. ORIGINAL DATA SOURCE = EPB
1671	25 AUG 1977	12:07:11.5	44.642N	114.597W			3.10N'	5		*		NO HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSICIST 5 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = GS LOCAL MAGNITUDE = 3.10 SCALE =ML AUTHORITY= ERD
1672	27 AUG 1977	11:51:33.0	52.190N	115.200W			3.10NT	5			CA	DEPTH RESTRAINED. 6 STATIONS USED IN SOLUTION. ORIGINAL DATA SOURCE = EPB
1673	29 AUG 1977	12:56:23.4	44.658N	114.522W			3.20MB	5				NO HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSICIST 19 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = GS LOCAL MAGNITUDE = 4.30 SCALE =ML AUTHORITY= GS
1674	9 OCT 1977	16:42:39.0	53.650N	118.290W			4.40NT	18			CA	DEPTH RESTRAINED. 14 STATIONS USED IN SOLUTION. ORIGINAL DATA SOURCE = EPB
1675	11 OCT 1977	03:50:49.2	43.869N	127.948W			4.80MB	15		*		NO HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSICIST 31 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = GS
1676	14 OCT 1977	02:53:32.9	48.522N	122.197W			3.00ML				W	
1677	26 OCT 1977	00:34:00.0	52.270N	115.240W			3.50NT	5			CA	DEPTH RESTRAINED. 8 STATIONS USED IN SOLUTION. ORIGINAL DATA SOURCE = EPB
1678	20 NOV 1977	00:22:39.1	43.470N	126.895W			4.70MB	15				NO HYPOCENTER SOLUTION DEPTH RESTRAINED BY. GEOPHYSICIST 28 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = GS
1679	27 NOV 1977	09:25:55.1	44.582N	116.273W		VI	4.20MB	5				NO REPORTED DAMAGE HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSICIST 30 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = GS LOCAL MAGNITUDE = 4.50 SCALE =ML AUTHORITY= GS

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
1680	4 JAN 1978	16:15:04.7	43.277N	126.523W			4.50MB	15		*	NO	POSSIBLE TSUNAMI GENERATED BY EARTHQUAKE POSSIBLE SEICHE ASSOCIATED WITH EARTHQUAKE HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSICIST 34 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = GS
1681	25 JAN 1978	01:09:20.8	47.891N	120.108W			3.31MC	1			UW	
1682	1 FEB 1978	05:07:26.6	43.816N	127.979W			4.70MB	15		*	NO	POSSIBLE TSUNAMI GENERATED BY EARTHQUAKE POSSIBLE SEICHE ASSOCIATED WITH EARTHQUAKE HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSICIST 18 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = GS
1683	6 FEB 1978	09:55:48.6	43.530N	126.864W			4.00MB	15		*	NO	POSSIBLE TSUNAMI GENERATED BY EARTHQUAKE POSSIBLE SEICHE ASSOCIATED WITH EARTHQUAKE HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSICIST 20 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = GS
1684	10 FEB 1978	14:09:16.1	47.804N	123.246W			3.08	44			UW	
1685	13 FEB 1978	17:35:36.1	45.072N	114.516W			3.30N'	5			NO	POSSIBLE TSUNAMI GENERATED BY EARTHQUAKE POSSIBLE SEICHE ASSOCIATED WITH EARTHQUAKE HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSICIST 7 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = GS LOCAL MAGNITUDE = 3.30 SCALE =ML AUTHORITY= GS
1686	16 FEB 1978	12:00:21.2	42.685N	125.890W			5.00MB	15		*	NO	POSSIBLE TSUNAMI GENERATED BY EARTHQUAKE POSSIBLE SEICHE ASSOCIATED WITH EARTHQUAKE HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSICIST 50 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = GS MAGNITUDE = 4.5 USING NOAA AVERAGE MS (IASPEI FORMULA) LOCAL MAGNITUDE = 4.80 SCALE =ML AUTHORITY= BRK
1687	22 FEB 1978	00:37:00.0	44.605N	115.070W			3.90MB	5			NO	POSSIBLE TSUNAMI GENERATED BY EARTHQUAKE POSSIBLE SEICHE ASSOCIATED WITH EARTHQUAKE HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSICIST 14 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = GS LOCAL MAGNITUDE = 3.80 SCALE =ML AUTHORITY= GS
1688	24 FEB 1978	06:58:37.3	43.031N	126.342W			4.50MB	15		*	NO	POSSIBLE TSUNAMI GENERATED BY EARTHQUAKE POSSIBLE SEICHE ASSOCIATED WITH EARTHQUAKE HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSICIST

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG	SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
													36 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = GS MAGNITUDE = 4.2 USING NOAA AVERAGE MS (IASPEI FORMULA)
1689	5 MAR 1978	18:13:35.9	48.057N	122.998W		IV	4.00MB		57		W	NO	POSSIBLE TSUNAMI GENERATED BY EARTHQUAKE POSSIBLE SEICHE ASSOCIATED WITH EARTHQUAKE REPORTED FELT INFORMATION 18 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = GS PARAMETERS OF EPICENTER FROM UNIV. WASHINGTON, SEATTLE LOCAL MAGNITUDE = 3.30 SCALE =ML AUTHORITY= GS
1690	11 MAR 1978	15:52:11.2	47.416N	122.710W		VI	4.30MB		25		W	NO	POSSIBLE TSUNAMI GENERATED BY EARTHQUAKE POSSIBLE SEICHE ASSOCIATED WITH EARTHQUAKE REPORTED DAMAGE 52 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = GS ISOSEISMAL MAP PUBLISHED BY USE PARAMETERS OF EPICENTER FROM UNIV. WASHINGTON, SEATTLE MAGNITUDE = 3.2 USING NOAA AVERAGE MS (IASPEI FORMULA) LOCAL MAGNITUDE = 4.80 SCALE =ML AUTHORITY= GS
1691	19 MAR 1978	02:33:47.8	44.496N	114.418W			3.20N'		5			NO	POSSIBLE TSUNAMI GENERATED BY EARTHQUAKE POSSIBLE SEICHE ASSOCIATED WITH EARTHQUAKE HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSICIST 9 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = GS LOCAL MAGNITUDE = 3.20 SCALE =ML AUTHORITY= GS
1692	22 MAR 1978	03:08:59.6	48.090N	119.491W			3.31MC		12.			UW	
1693	22 MAR 1978	14:30:15.7	44.293N	115.496W			4.10N'		5			NO	POSSIBLE TSUNAMI GENERATED BY EARTHQUAKE POSSIBLE SEICHE ASSOCIATED WITH EARTHQUAKE HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSICIST 20 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = GS LOCAL MAGNITUDE = 4.10 SCALE =ML AUTHORITY= GS
1694	29 MAR 1978	09:58:50.0	50.110N	127.620W			3.10ML		18			CA	DEPTH RESTRAINED. 7 STATIONS USED IN SOLUTION. ORIGINAL DATA SOURCE = EPB
1695	29 MAR 1978	12:16:38.4	48.204N	122.762W		IV	2.70N'		24.		W	NO	POSSIBLE TSUNAMI GENERATED BY EARTHQUAKE POSSIBLE SEICHE ASSOCIATED WITH EARTHQUAKE REPORTED FELT INFORMATION 16 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = GS PARAMETERS OF EPICENTER FROM UNIV. WASHINGTON, SEATTLE LOCAL MAGNITUDE = 2.70 SCALE =ML AUTHORITY= GS

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
1696	31 MAR 1978	08:03:00.2	47.417N	122.715W		VI	4.20N'	23		W	NO	POSSIBLE TSUNAMI GENERATED BY EARTHQUAKE POSSIBLE SEICHE ASSOCIATED WITH EARTHQUAKE REPORTED DAMAGE 24 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = GS ISOSEISMAL MAP PUBLISHED BY USE PARAMETERS OF EPICENTER FROM UNIV. WASHINGTON, SEATTLE LOCAL MAGNITUDE = 4.20 SCALE =ML AUTHORITY= GS
1697	3 APR 1978	10:10:08.1	44.051N	116.356W		V	3.20N'	5			NO	POSSIBLE TSUNAMI GENERATED BY EARTHQUAKE POSSIBLE SEICHE ASSOCIATED WITH EARTHQUAKE REPORTED FELT INFORMATION HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSICIST 9 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = GS LOCAL MAGNITUDE = 3.20 SCALE =ML AUTHORITY= GS
1698	15 APR 1978	15:29:23.1	42.762N	126.672W			4.10MB	15		*	NO	POSSIBLE TSUNAMI GENERATED BY EARTHQUAKE POSSIBLE SEICHE ASSOCIATED WITH EARTHQUAKE HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSICIST 13 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = GS
1699	16 APR 1978	19:45:16.9	47.752N	120.233W			3.30MC	1			UW	
1700	23 APR 1978	20:10:02.4	44.549N	127.245W			3.90MB	15		*	NO	POSSIBLE TSUNAMI GENERATED BY EARTHQUAKE POSSIBLE SEICHE ASSOCIATED WITH EARTHQUAKE HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSICIST 7 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = GS
1701	26 APR 1978	07:16:45.3	43.915N	114.115W			3.10N'	5		*	NO	POSSIBLE TSUNAMI GENERATED BY EARTHQUAKE POSSIBLE SEICHE ASSOCIATED WITH EARTHQUAKE HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSICIST 6 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = GS LOCAL MAGNITUDE = 3.10 SCALE =ML AUTHORITY= GS
1702	2 MAY 1978	21:04:06.9	46.512N	118.618W			3.05MC	3			UW	POSSIBLE EXPLOSION.
1703	14 MAY 1978	22:37:04.1	52.661N	118.704W			4.80MB	10			NO	POSSIBLE TSUNAMI GENERATED BY EARTHQUAKE POSSIBLE SEICHE ASSOCIATED WITH EARTHQUAKE HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSICIST 82 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = GS MAGNITUDE = 4.4 USING NOAA AVERAGE MS (IASPEI FORMULA)

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
1704	25 MAY 1978	21:53:44.0	50.200N	127.700W			3.30ML	18			CA	DEPTH RESTRAINED. 7 STATIONS USED IN SOLUTION. ORIGINAL DATA SOURCE = EPB
1705	2 JUN 1978	20:41:43.7	50.259N	127.688W		V	5.10MB	21			NO	POSSIBLE TSUNAMI GENERATED BY EARTHQUAKE POSSIBLE SEICHE ASSOCIATED WITH EARTHQUAKE REPORTED FELT INFORMATION 183 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = GS MAGNITUDE = 5.2 USING NOAA AVERAGE MS (IASPEI FORMULA)
1706	3 JUN 1978	11:54:39.1	50.305N	127.618W			4.60MB	30			NO	POSSIBLE TSUNAMI GENERATED BY EARTHQUAKE POSSIBLE SEICHE ASSOCIATED WITH EARTHQUAKE REPORTED FELT INFORMATION 58 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = GS MAGNITUDE = 4.3 USING NOAA AVERAGE MS (IASPEI FORMULA)
1707	3 JUN 1978	12:54:26.0	50.200N	127.750W			3.00ML	18			CA	DEPTH RESTRAINED. 7 STATIONS USED IN SOLUTION. ORIGINAL DATA SOURCE = EPB
1708	11 JUN 1978	02:43:55.0	46.841N	120.955W			3.06MC				UW	
1709	12 JUN 1978	10:52:23.0	50.220N	127.640W			3.90ML	18			CA	DEPTH RESTRAINED. 8 STATIONS USED IN SOLUTION. ORIGINAL DATA SOURCE = EPB
1710	13 JUN 1978	11:39:30.0	50.230N	127.530W			3.60ML	18			CA	DEPTH RESTRAINED. 8 STATIONS USED IN SOLUTION. ORIGINAL DATA SOURCE = EPB
1711	18 JUN 1978	01:03:45.3	42.699N	126.291W			4.30MB	15		*	NO	POSSIBLE TSUNAMI GENERATED BY EARTHQUAKE POSSIBLE SEICHE ASSOCIATED WITH EARTHQUAKE HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSICIST 13 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = GS
1712	20 JUN 1978	14:40:20.8	47.546N	122.720W			3.31	50			UW	
1713	27 JUN 1978	02:19:00.3	46.937N	121.137W			3.43	3			UW	
1714	9 JUL 1978	23:50:05.5	42.537N	126.628W			4.00MB	15		*	NO	POSSIBLE TSUNAMI GENERATED BY EARTHQUAKE POSSIBLE SEICHE ASSOCIATED WITH EARTHQUAKE HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSICIST 10 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = GS

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
1715	18 JUL 1978	22:16:18.0	52.200N	115.300W			3.30NT	5			CA	DEPTH RESTRAINED. 5 STATIONS USED IN SOLUTION. ORIGINAL DATA SOURCE = EPB
1716	19 JUL 1978	04:17:30.6	45.087N	114.416W			3.70N'	5		*	NO	POSSIBLE TSUNAMI GENERATED BY EARTHQUAKE POSSIBLE SEICHE ASSOCIATED WITH EARTHQUAKE HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSICIST 5 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = GS MAGNITUDE(FRACTIONAL NOTATION,AVE)=3.70, AUTHORITY-MSO LOCAL MAGNITUDE = 3.60 SCALE =ML AUTHORITY= GS
1717	25 JUL 1978	23:30:50.9	50.303N	127.577W		V	5.30MB	11			NO	POSSIBLE TSUNAMI GENERATED BY EARTHQUAKE POSSIBLE SEICHE ASSOCIATED WITH EARTHQUAKE REPORTED FELT INFORMATION 161 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = GS MAGNITUDE = 5.1 USING NOAA AVERAGE MS (IASPEI FORMULA) LOCAL MAGNITUDE = 5.60 SCALE =ML AUTHORITY= OTT
1718	26 JUL 1978	06:09:40.0	50.210N	127.930W			3.00ML	18			CA	DEPTH RESTRAINED. 6 STATIONS USED IN SOLUTION. ORIGINAL DATA SOURCE = EPB
1719	3 AUG 1978	10:13:22.0	52.060N	115.320W			3.00ML	5			CA	DEPTH RESTRAINED. 4 STATIONS USED IN SOLUTION. ORIGINAL DATA SOURCE = EPB
1720	15 AUG 1978	01:11:55.0	52.220N	115.390W			3.40NT	5			CA	DEPTH RESTRAINED. 8 STATIONS USED IN SOLUTION. ORIGINAL DATA SOURCE = EPB
1721	15 AUG 1978	06:58:52.0	52.190N	115.340W			3.10NT	5			CA	DEPTH RESTRAINED. 7 STATIONS USED IN SOLUTION. ORIGINAL DATA SOURCE = EPB
1722	19 AUG 1978	01:51:19.0	48.629N	123.550W		V	4.30MB	32		C	NO	POSSIBLE TSUNAMI GENERATED BY EARTHQUAKE POSSIBLE SEICHE ASSOCIATED WITH EARTHQUAKE REPORTED FELT INFORMATION 11 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = GS PARAMETERS OF EPICENTER FROM COMM. ENERG. ATOM., PARIS LOCAL MAGNITUDE = 3.50 SCALE =ML AUTHORITY= OTT
1723	23 AUG 1978	10:37:18.5	48.358N	123.223W			3.60	21			UW	
1724	28 AUG 1978	02:17:11.3	47.623N	122.958W			3.15	47			UW	
1725	10 OCT 1978	12:04:27.9	47.900N	119.682W			3.07MC	2			UW	

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
1726	10 OCT 1978	12:04:37.0	47.358N	119.420W			3.24MC	8			UW	
1727	29 OCT 1978	13:46:44.5	44.962N	114.271W		V	4.20MB	5			NO	POSSIBLE TSUNAMI GENERATED BY EARTHQUAKE POSSIBLE SEICHE ASSOCIATED WITH EARTHQUAKE REPORTED FELT INFORMATION HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSICIST 49 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = GS MAGNITUDE(FRACTIONAL NOTATION,AVE)=5.00, AUTHORITY- GS LOCAL MAGNITUDE = 5.00 SCALE =ML AUTHORITY= MSO
1728	29 OCT 1978	17:20:19.4	44.916N	114.346W			3.30N'	5		*	NO	POSSIBLE TSUNAMI GENERATED BY EARTHQUAKE POSSIBLE SEICHE ASSOCIATED WITH EARTHQUAKE HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSICIST 11 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION NOAA FEELS THIS IS A LESS RELIABLE SOLUTION ORIGINAL DATA SOURCE = GS LOCAL MAGNITUDE = 3.30 SCALE =ML AUTHORITY= GS
1729	9 NOV 1978	13:08:28.0	50.730N	114.280W			3.20ML	18			CA	DEPTH RESTRAINED. 5 STATIONS USED IN SOLUTION. ORIGINAL DATA SOURCE = EPB
1730	20 NOV 1978	14:25:51.8	44.001N	114.414W		IV	3.70N'	5			NO	POSSIBLE TSUNAMI GENERATED BY EARTHQUAKE POSSIBLE SEICHE ASSOCIATED WITH EARTHQUAKE REPORTED FELT INFORMATION HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSICIST 11 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = GS MAGNITUDE(FRACTIONAL NOTATION,AVE)=3.70, AUTHORITY-MSO LOCAL MAGNITUDE = 3.20 SCALE =ML AUTHORITY= GS
1731	12 DEC 1978	08:24:58.2	43.992N	114.410W			3.50N'	5			NO	POSSIBLE TSUNAMI GENERATED BY EARTHQUAKE POSSIBLE SEICHE ASSOCIATED WITH EARTHQUAKE HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSICIST 11 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = GS LOCAL MAGNITUDE = 3.50 SCALE =ML AUTHORITY= GS
1732	28 DEC 1978	12:18:58.3	47.309N	123.163W			3.42	42			UW	
1733	31 DEC 1978	03:23:46.7	47.579N	121.849W		VI	4.00N'	20		W	NO	POSSIBLE TSUNAMI GENERATED BY EARTHQUAKE POSSIBLE SEICHE ASSOCIATED WITH EARTHQUAKE REPORTED DAMAGE 36 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION ORIGINAL DATA SOURCE = GS PARAMETERS OF EPICENTER FROM UNIV. WASHINGTON, SEATTLE LOCAL MAGNITUDE = 4.00 SCALE =ML AUTHORITY= GS
1734	19 JAN 1979	14:55:15.4	47.923N	119.685W		V	3.60ML	10			N	ORIGINAL DATA SOURCE = GS REPORTED FELT INFORMATION.

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CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
												18 P AND/OR P′ ARRIVALS USED IN HYPOCENTER SOLUTION. PARAMETERS OF EPICENTER SUPPLIED BY UNIV OF WASHINGTON
1735	21 JAN 1979	20:40:06.1	47.895N	119.682W			3.01MC	3			UW	
1736	1 FEB 1979	11:26:46.4	42.575N	126.346W			4.80MB	15			N	ORIGINAL DATA SOURCE = GS MAGNITUDE= 4.2MS MS COMPUTED FROM LONG-PERIOD VERTICAL COMPONENT. HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSICIST. 43 P AND/OR P′ ARRIVALS USED IN HYPOCENTER SOLUTION. NOAA FEELS THIS TO BE A LESS RELIABLE SOLUTION.
1737	1 FEB 1979	16:23:51.4	42.554N	126.356W			4.30MB	15			N	ORIGINAL DATA SOURCE = GS MAGNITUDE= 3.9MS MS COMPUTED FROM LONG-PERIOD VERTICAL COMPONENT. HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSICIST. 28 P AND/OR P′ ARRIVALS USED IN HYPOCENTER SOLUTION. NOAA FEELS THIS TO BE A LESS RELIABLE SOLUTION.
1738	1 FEB 1979	20:18:28.2	47.524N	121.920W		V	3.60ML	8			N	ORIGINAL DATA SOURCE = GS REPORTED FELT INFORMATION. 13 P AND/OR P′ ARRIVALS USED IN HYPOCENTER SOLUTION. PARAMETERS OF EPICENTER SUPPLIED BY UNIV OF WASHINGTON
1739	17 FEB 1979	08:36:21.4	46.169N	119.935W			3.59MC	9			UW	
1740	3 MAR 1979	09:46:55.3	42.714N	126.018W			3.90MB	15			N	ORIGINAL DATA SOURCE = GS HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSICIST. 9 P AND/OR P′ ARRIVALS USED IN HYPOCENTER SOLUTION. NOAA FEELS THIS TO BE A LESS RELIABLE SOLUTION.
1741	11 MAR 1979	14:39:33.0	46.464N	122.399W		V	3.80MB	9			N	ORIGINAL DATA SOURCE = GS REPORTED FELT INFORMATION. 39 P AND/OR P′ ARRIVALS USED IN HYPOCENTER SOLUTION. PARAMETERS OF EPICENTER SUPPLIED BY UNIV OF WASHINGTON 3.80ML, MAGNITUDE AUTHORITY = GS
1742	12 MAR 1979	12:41:36.1	48.202N	122.761W		V	3.80MB	26			N	ORIGINAL DATA SOURCE = GS REPORTED FELT INFORMATION. 30 P AND/OR P′ ARRIVALS USED IN HYPOCENTER SOLUTION. PARAMETERS OF EPICENTER SUPPLIED BY UNIV OF WASHINGTON 3.40ML, MAGNITUDE AUTHORITY = GS
1743	13 MAR 1979	10:06:14.0	49.257N	126.958W			4.70MB	10			N	ORIGINAL DATA SOURCE = GS HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSICIST. 11 P AND/OR P′ ARRIVALS USED IN HYPOCENTER SOLUTION.
1744	15 MAR 1979	09:50:24.2	43.105N	126.345W			3.90MB	15			N	ORIGINAL DATA SOURCE = GS HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSICIST. 10 P AND/OR P′ ARRIVALS USED IN HYPOCENTER SOLUTION. NOAA FEELS THIS TO BE A LESS RELIABLE SOLUTION.

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG	SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
1745	21 MAR 1979	14:49:24.3	42.085N	126.789W			4.50MB		15			N	ORIGINAL DATA SOURCE = GS HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSICIST. 26 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. NOAA FEELS THIS TO BE A LESS RELIABLE SOLUTION.
1746	8 APR 1979	07:29:37.8	45.995N	118.447W			4.15MC		5			UW	
1747	4 MAY 1979	08:08:49.9	43.575N	127.206W			4.30MB		15			N	ORIGINAL DATA SOURCE = GS MAGNITUDE= 3.6MS MS COMPUTED FROM LONG-PERIOD VERTICAL COMPONENT. HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSICIST. 18 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. NOAA FEELS THIS TO BE A LESS RELIABLE SOLUTION.
1748	7 JUN 1979	09:50:30.4	43.533N	127.093W			4.90MB		15			N	ORIGINAL DATA SOURCE = GS MAGNITUDE= 4.2MS MS COMPUTED FROM LONG-PERIOD VERTICAL COMPONENT. HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSICIST. 76 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION.
1749	19 JUN 1979	18:44:38.2	43.261N	126.197W			4.20MB		15			N	ORIGINAL DATA SOURCE = GS HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSICIST. 16 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. NOAA FEELS THIS TO BE A LESS RELIABLE SOLUTION.
1750	27 JUN 1979	12:48:21.5	43.295N	126.553W			4.50MB		15			N	ORIGINAL DATA SOURCE = GS HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSICIST. 33 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. NOAA FEELS THIS TO BE A LESS RELIABLE SOLUTION.
1751	7 JUL 1979	20:50:01.5	46.521N	122.169W		V	3.80ML		5			N	ORIGINAL DATA SOURCE = GS REPORTED FELT INFORMATION. HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSICIST. 9 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. NOAA FEELS THIS TO BE A LESS RELIABLE SOLUTION.
1752	21 JUL 1979	22:18:47.3	47.715N	114.152W			3.50ML		5			N	ORIGINAL DATA SOURCE = GS REPORTED FELT INFORMATION. HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSICIST. 6 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. NOAA FEELS THIS TO BE A LESS RELIABLE SOLUTION.
1753	28 JUL 1979	02:19:06.9	46.670N	120.591W			3.69MC					UW	
1754	28 AUG 1979	01:23:56.9	43.392N	126.338W			4.20MB		15			N	ORIGINAL DATA SOURCE = GS HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSICIST. 14 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. NOAA FEELS THIS TO BE A LESS RELIABLE SOLUTION.
1755	30 AUG 1979	14:22:58.0	47.645N	127.837W			4.90MB		15			N	ORIGINAL DATA SOURCE = GS HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSICIST.

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
												15 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. NOAA FEELS THIS TO BE A LESS RELIABLE SOLUTION.
1756	25 SEP 1979	18:28:28.0	52.249N	115.440W			4.30	5			N	ORIGINAL DATA SOURCE = GS MAGNITUDE AUTHORITY = OTT 14 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION.
1757	16 OCT 1979	18:33:44.6	48.245N	114.540W			3.10ML	5			N	ORIGINAL DATA SOURCE = GS REPORTED FELT INFORMATION. MAGNITUDE = 2.70 MAGNITUDE AUTHORITY = MSO HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSICIST. 6 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. NOAA FEELS THIS TO BE A LESS RELIABLE SOLUTION.
1758	9 NOV 1979	16:02:11.4	49.002N	124.415W		IV	4.30MB	28			N	ORIGINAL DATA SOURCE = GS REPORTED FELT INFORMATION. 16 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 4.10ML, MAGNITUDE AUTHORITY = PGC
1759	10 NOV 1979	04:53:29.8	47.719N	120.056W			3.20MC				UW	
1760	15 NOV 1979	16:12:47.6	49.240N	122.345W		III	3.60ML	15			N	ORIGINAL DATA SOURCE = GS REPORTED FELT INFORMATION. 9 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. MAGNITUDE AUTHORITY = PGC
1761	18 NOV 1979	02:08:45.5	46.887N	119.567W			3.10MC	1			UW	
1762	24 NOV 1979	11:51:14.0	46.931N	119.565W			3.40MC				UW	
1763	26 NOV 1979	23:18:26.2	48.590N	122.398W		V	4.10MB	21			N	ORIGINAL DATA SOURCE = GS REPORTED FELT INFORMATION. 27 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. PARAMETERS OF EPICENTER SUPPLIED BY UNIV OF WASHINGTON 3.90ML, MAGNITUDE AUTHORITY = GS
1764	27 NOV 1979	02:13:46.5	48.587N	122.406W			3.30ML	20			N	ORIGINAL DATA SOURCE = GS REPORTED FELT INFORMATION. HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSICIST. 13 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. NOAA FEELS THIS TO BE A LESS RELIABLE SOLUTION.
1765	29 NOV 1979	16:19:07.1	49.388N	123.955W			3.80MB	69			N	ORIGINAL DATA SOURCE = GS REPORTED FELT INFORMATION. 15 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION.
1766	10 DEC 1979	05:40:07.5	46.656N	120.575W			3.40MC	5			UW	FELT
1767	7 MAR 1980	21:36:30.1	49.790N	125.741W			4.90MB	44			N	ORIGINAL DATA SOURCE = GS REPORTED FELT INFORMATION. 57 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION.

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
1768	20 MAR 1980	23:47:43.3	46.210N	122.192W			4.10ML	4			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 17 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. MAGNITUDE AUTHORITY = GS
1769	22 MAR 1980	22:22:42.2	46.209N	122.191W			4.30MB	3			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 16 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.50ML, MAGNITUDE AUTHORITY = GS
1770	23 MAR 1980	15:22:42.9	46.222N	122.208W			3.40ML	1			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 10 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. MAGNITUDE AUTHORITY = GS
1771	24 MAR 1980	13:14:42.2	46.204N	122.221W			3.20ML	2			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 6 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. MAGNITUDE AUTHORITY = GS
1772	24 MAR 1980	21:56:49.6	46.211N	122.188W			4.20MB	3			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 24 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 4.20ML, MAGNITUDE AUTHORITY = GS
1773	25 MAR 1980	04:07:09.7	46.207N	122.189W			4.20MB	4			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 10 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.40ML, MAGNITUDE AUTHORITY = GS
1774	25 MAR 1980	07:08:46.2	46.200N	122.186W			4.20MB	4			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 11 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.40ML, MAGNITUDE AUTHORITY = GS
1775	25 MAR 1980	13:42:14.0	46.204N	122.186W			3.30ML	4			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 7 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.30ML, MAGNITUDE AUTHORITY = GS
1776	25 MAR 1980	17:18:47.0	46.212N	122.181W			3.50ML	1			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 9 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. MAGNITUDE AUTHORITY = GS
1777	25 MAR 1980	21:50:51.3	46.207N	122.201W			3.40ML	3			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 3 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. MAGNITUDE AUTHORITY = GS

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
1778	25 MAR 1980	22:22:14.7	46.203N	122.167W			3.40ML	3			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 7 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. MAGNITUDE AUTHORITY = GS
1779	25 MAR 1980	22:53:01.7	46.203N	122.178W			3.80MB	4			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 18 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.70ML, MAGNITUDE AUTHORITY = GS
1780	26 MAR 1980	01:06:30.0	46.212N	122.190W			3.50ML	2			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 14 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. MAGNITUDE AUTHORITY = GS
1781	26 MAR 1980	02:03:18.4	46.215N	122.191W			4.30MB	4			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 17 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.80ML, MAGNITUDE AUTHORITY = GS
1782	26 MAR 1980	02:36:00.0	46.204N	122.187W			4.20MB	4			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 16 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.50ML, MAGNITUDE AUTHORITY = GS
1783	26 MAR 1980	03:36:24.1	46.209N	122.176W			3.50ML	4			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 5 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. MAGNITUDE AUTHORITY = GS
1784	26 MAR 1980	04:10:43.4	46.204N	122.196W			3.10ML	3			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 8 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. MAGNITUDE AUTHORITY = GS
1785	26 MAR 1980	04:14:28.9	46.210N	122.191W			3.80MB	4			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 12 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.70ML, MAGNITUDE AUTHORITY = GS
1786	26 MAR 1980	05:00:04.4	46.210N	122.182W			4.10MB	3			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 14 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.60ML, MAGNITUDE AUTHORITY = GS
1787	26 MAR 1980	07:17:21.9	46.207N	122.179W			3.80MB	4			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 11 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.50ML, MAGNITUDE AUTHORITY = GS

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
1788	26 MAR 1980	09:10:07.9	46.210N	122.175W			4.10MD	4			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 17 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.50ML, MAGNITUDE AUTHORITY = GS
1789	26 MAR 1980	09:44:02.7	46.206N	122.168W			4.20MD	4			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 20 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.80ML, MAGNITUDE AUTHORITY = GS
1790	26 MAR 1980	17:07:10.7	46.194N	122.193W			4.10MD	7			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 22 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 4.00ML, MAGNITUDE AUTHORITY = GS
1791	26 MAR 1980	20:37:49.0	46.207N	122.185W			3.70ML	5			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 7 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. MAGNITUDE AUTHORITY = GS
1792	27 MAR 1980	03:40:05.7	46.222N	122.181W			4.10MB	5			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 22 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.90ML, MAGNITUDE AUTHORITY = GS
1793	27 MAR 1980	03:48:58.5	46.212N	122.189W			4.20MB	5			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 20 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.90ML, MAGNITUDE AUTHORITY = GS
1794	27 MAR 1980	04:26:10.1	46.199N	122.170W			4.00MB	7			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 16 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.40ML, MAGNITUDE AUTHORITY = GS
1795	27 MAR 1980	05:30:43.5	46.208N	122.185W			3.40ML	4			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 9 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. MAGNITUDE AUTHORITY = GS
1796	27 MAR 1980	06:33:24.0	46.205N	122.226W			4.10MB	1			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 22 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.80ML, MAGNITUDE AUTHORITY = GS
1797	27 MAR 1980	07:39:15.6	46.208N	122.182W			3.40ML	5			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 10 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. MAGNITUDE AUTHORITY = GS

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG	SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
1798	27 MAR 1980	12:32:54.6	46.211N	122.190W			3.40ML		4			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 12 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. MAGNITUDE AUTHORITY = GS
1799	27 MAR 1980	14:55:54.7	46.207N	122.192W			4.20MB		4			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 20 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.90ML, MAGNITUDE AUTHORITY = GS
1800	27 MAR 1980	15:55:03.8	46.216N	122.200W			4.00MB		6			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 22 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.60ML, MAGNITUDE AUTHORITY = GS
1801	27 MAR 1980	18:55:44.9	46.210N	122.194W			3.60ML		5			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 14 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. MAGNITUDE AUTHORITY = GS
1802	27 MAR 1980	20:16:43.1	46.209N	122.185W			3.90MB		5			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 22 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.80ML, MAGNITUDE AUTHORITY = GS
1803	27 MAR 1980	22:00:05.6	46.219N	122.197W			4.60MB		4			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 36 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 4.50ML, MAGNITUDE AUTHORITY = GS
1804	28 MAR 1980	01:51:12.6	46.212N	122.183W			4.10MB		5			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 22 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.70ML, MAGNITUDE AUTHORITY = GS
1805	28 MAR 1980	03:35:50.9	46.208N	122.189W			3.10ML		5			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 16 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. MAGNITUDE AUTHORITY = GS
1806	28 MAR 1980	08:28:25.7	46.221N	122.175W			4.30MB		4			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 29 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 4.20ML, MAGNITUDE AUTHORITY = GS
1807	28 MAR 1980	12:51:19.4	46.217N	122.179W			3.70MB		5			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 19 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.60ML, MAGNITUDE AUTHORITY = GS

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG SM	H (KM)	DIS (KM)	Q S	LOCATION AND COMMENTS
1808	28 MAR 1980	13:59:38.5	46.212N	122.188W			4.00MB	5		N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 19 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.70ML, MAGNITUDE AUTHORITY = GS
1809	28 MAR 1980	15:18:43.4	46.209N	122.204W			3.60ML	2		N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 15 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. MAGNITUDE AUTHORITY = GS
1810	28 MAR 1980	22:50:56.7	46.183N	122.202W			3.70MD	5		N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 18 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.70ML, MAGNITUDE AUTHORITY = GS
1811	28 MAR 1980	23:50:28.5	46.216N	122.195W			3.60ML	4		N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 13 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. MAGNITUDE AUTHORITY = GS
1812	29 MAR 1980	05:48:47.3	46.211N	122.189W			3.80ML	5		N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 24 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. MAGNITUDE AUTHORITY = GS
1813	29 MAR 1980	08:36:56.8	46.207N	122.170W			4.00MB	5		N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 20 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.80ML, MAGNITUDE AUTHORITY = GS
1814	29 MAR 1980	10:34:40.5	46.220N	122.184W			3.70MD	4		N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 9 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.50ML, MAGNITUDE AUTHORITY = GS
1815	29 MAR 1980	11:51:48.2	46.209N	122.189W			4.10MB	6		N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 21 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 4.00ML, MAGNITUDE AUTHORITY = GS
1816	29 MAR 1980	13:01:50.9	46.205N	122.208W			3.70MB	1		N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 15 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.70ML, MAGNITUDE AUTHORITY = GS
1817	29 MAR 1980	15:05:24.9	46.207N	122.183W			3.70MD	4		N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 17 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.80ML, MAGNITUDE AUTHORITY = GS

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG	SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
1818	29 MAR 1980	15:35:39.4	46.200N	122.182W			4.20MB		5			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 23 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 4.20ML, MAGNITUDE AUTHORITY = GS
1819	29 MAR 1980	19:01:01.9	46.216N	122.179W			3.40ML		4			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 5 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. MAGNITUDE AUTHORITY = GS
1820	29 MAR 1980	20:55:52.1	46.212N	122.185W			4.00ML		4			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 22 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. MAGNITUDE AUTHORITY = GS
1821	29 MAR 1980	23:20:40.7	46.205N	122.186W			4.10MB		4			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 18 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.90ML, MAGNITUDE AUTHORITY = GS
1822	30 MAR 1980	02:56:19.8	46.216N	122.188W			4.20MB		3			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 21 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.80ML, MAGNITUDE AUTHORITY = GS
1823	30 MAR 1980	03:53:54.9	46.204N	122.196W			4.10MB		2			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 20 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.90ML, MAGNITUDE AUTHORITY = GS
1824	30 MAR 1980	07:42:17.3	46.214N	122.180W			4.10MB		3			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 24 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.80ML, MAGNITUDE AUTHORITY = GS
1825	30 MAR 1980	09:16:53.2	46.210N	122.190W			4.20MB		5			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 29 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 4.20ML, MAGNITUDE AUTHORITY = GS
1826	30 MAR 1980	12:39:57.8	46.210N	122.174W			4.10MB		5			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 22 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.70ML, MAGNITUDE AUTHORITY = GS
1827	30 MAR 1980	13:32:25.4	46.215N	122.193W			4.30MB		5			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 22 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 4.20ML, MAGNITUDE AUTHORITY = GS

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG	SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
1828	30 MAR 1980	13:49:37.4	43.430N	127.123W			5.20MB		15			N	ORIGINAL DATA SOURCE = GS MAGNITUDE= 4.7MS MS COMPUTED FROM LONG-PERIOD VERTICAL COMPONENT. HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSIST. 80 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION.
1829	30 MAR 1980	17:55:10.2	46.216N	122.180W			4.50MB		5			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 28 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 4.40ML, MAGNITUDE AUTHORITY = GS
1830	30 MAR 1980	22:47:11.9	46.218N	122.195W			4.40MB		4			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 23 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 4.20ML, MAGNITUDE AUTHORITY = GS
1831	31 MAR 1980	02:44:06.3	46.214N	122.193W			4.20MB		4			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 27 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 4.10ML, MAGNITUDE AUTHORITY = GS
1832	31 MAR 1980	07:49:42.2	46.217N	122.190W			4.40ML		4			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 21 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. MAGNITUDE AUTHORITY = GS
1833	31 MAR 1980	08:12:52.0	46.220N	122.204W			4.20MB		4			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 19 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 4.10ML, MAGNITUDE AUTHORITY = GS
1834	31 MAR 1980	11:34:10.0	46.220N	122.188W			4.60MB		4			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 32 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 4.40ML, MAGNITUDE AUTHORITY = GS
1835	31 MAR 1980	14:49:01.3	46.222N	122.193W			4.40MB		4			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 24 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 4.30ML, MAGNITUDE AUTHORITY = GS
1836	31 MAR 1980	19:29:11.5	46.213N	122.177W			3.80ML		4			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 18 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. MAGNITUDE AUTHORITY = GS
1837	31 MAR 1980	19:37:10.1	46.195N	122.180W			4.50MB		3			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 19 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.90ML, MAGNITUDE AUTHORITY = GS

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG SM	H (KM)	DIS (KM)	Q S	LOCATION AND COMMENTS
1838	1 APR 1980	04:24:30.5	46.222N	122.184W			5.00MB	4		N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. MAGNITUDE= 3.7MS MS COMPUTED FROM LONG-PERIOD VERTICAL COMPONENT. 34 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 4.70ML, MAGNITUDE AUTHORITY = GS
1839	1 APR 1980	08:54:25.4	46.218N	122.175W			4.50MB	4		N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 30 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 4.50ML, MAGNITUDE AUTHORITY = GS
1840	1 APR 1980	12:30:46.7	46.218N	122.182W			4.80MB	4		N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 32 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 4.00ML, MAGNITUDE AUTHORITY = GS
1841	1 APR 1980	23:14:38.6	46.206N	122.194W			4.50MB	5		N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 32 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 4.60ML, MAGNITUDE AUTHORITY = GS
1842	2 APR 1980	09:37:13.1	46.220N	122.184W			4.80MB	3		N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. MAGNITUDE= 3.7MS MS COMPUTED FROM LONG-PERIOD VERTICAL COMPONENT. 35 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 4.70ML, MAGNITUDE AUTHORITY = GS
1843	2 APR 1980	18:48:20.8	46.210N	122.195W			4.10ML	4		N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 14 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. MAGNITUDE AUTHORITY = GS
1844	3 APR 1980	02:43:19.8	46.234N	122.204W			4.50MB	3		N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 22 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 4.40ML, MAGNITUDE AUTHORITY = GS
1845	3 APR 1980	09:35:27.2	46.234N	122.173W			4.80MB	1		N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 29 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 4.80ML, MAGNITUDE AUTHORITY = GS
1846	3 APR 1980	15:30:20.2	46.208N	122.189W			3.70ML	4		N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 13 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. MAGNITUDE AUTHORITY = GS
1847	3 APR 1980	21:51:58.8	46.227N	122.204W			3.60ML	3		N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM.

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
												10 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. MAGNITUDE AUTHORITY = GS
1848	3 APR 1980	23:57:52.3	46.232N	122.218W			5.00MB	2			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 27 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 4.50ML, MAGNITUDE AUTHORITY = GS
1849	4 APR 1980	09:42:35.5	46.224N	122.209W			4.40MB	5			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 21 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.80ML, MAGNITUDE AUTHORITY = GS
1850	4 APR 1980	09:48:56.3	46.237N	122.206W			3.60ML	5			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 11 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. MAGNITUDE AUTHORITY = GS
1851	4 APR 1980	13:45:05.8	46.212N	122.176W			4.50MB	4			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. MAGNITUDE= 3.8MS MS COMPUTED FROM LONG-PERIOD VERTICAL COMPONENT. 29 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 4.50ML, MAGNITUDE AUTHORITY = GS
1852	4 APR 1980	21:40:43.5	46.132N	122.033W			4.40ML	10			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 19 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. MAGNITUDE AUTHORITY = GS
1853	5 APR 1980	02:09:29.0	46.219N	122.183W			3.40ML	3			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 10 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. MAGNITUDE AUTHORITY = GS
1854	5 APR 1980	06:39:03.3	46.208N	122.184W			3.70ML	5			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 9 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. MAGNITUDE AUTHORITY = GS
1855	5 APR 1980	08:49:17.3	46.231N	122.166W			4.30MB	4			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 13 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.90ML, MAGNITUDE AUTHORITY = GS
1856	5 APR 1980	10:58:49.5	46.214N	122.188W			4.10MB	3			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 8 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.60ML, MAGNITUDE AUTHORITY = GS
1857	5 APR 1980	13:46:56.0	46.225N	122.182W			4.40MB	1			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM.

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT.	LONG	SL	INTEN (MM)	MAG SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
												15 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.80ML, MAGNITUDE AUTHORITY = GS
1858	5 APR 1980	16:42:05.7	46.230N	122.194W			4.90MD	2			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. MAGNITUDE= 4.5MS MS COMPUTED FROM LONG-PERIOD VERTICAL COMPONENT. 21 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 4.50ML, MAGNITUDE AUTHORITY = GS
1859	5 APR 1980	23:56:53.2	46.186N	122.192W			3.60ML	8			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 5 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. MAGNITUDE AUTHORITY = GS
1860	6 APR 1980	06:41:38.6	46.226N	122.180W			3.10ML	1			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 5 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. MAGNITUDE AUTHORITY = GS
1861	6 APR 1980	06:58:04.5	46.231N	122.194W			4.70MD	2			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. MAGNITUDE= 3.8MS MS COMPUTED FROM LONG-PERIOD VERTICAL COMPONENT. 30 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 4.70ML, MAGNITUDE AUTHORITY = GS
1862	6 APR 1980	11:08:27.6	46.225N	122.184W			3.20ML	2			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 5 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. MAGNITUDE AUTHORITY = GS
1863	6 APR 1980	15:00:38.4	46.214N	122.184W			3.40ML	5			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 5 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. MAGNITUDE AUTHORITY = GS
1864	6 APR 1980	17:18:49.3	46.295N	121.826W			3.60ML	1			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 4 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. MAGNITUDE AUTHORITY = GS
1865	6 APR 1980	20:26:12.4	46.205N	122.188W			3.60ML	5			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 9 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. MAGNITUDE AUTHORITY = GS
1866	6 APR 1980	23:22:56.2	46.218N	122.172W			3.40ML	3			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 6 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. MAGNITUDE AUTHORITY = GS

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
1867	6 APR 1980	23:26:01.1	46.218N	122.191W			4.30MB	1			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 19 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.70ML, MAGNITUDE AUTHORITY = GS
1868	7 APR 1980	01:54:14.4	46.286N	122.151W			3.50ML	5			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 5 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. MAGNITUDE AUTHORITY = GS
1869	7 APR 1980	01:57:45.0	46.215N	122.193W			4.00MB	4			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 6 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.50ML, MAGNITUDE AUTHORITY = GS
1870	7 APR 1980	03:52:03.4	46.211N	122.183W			3.50ML	4			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 4 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. MAGNITUDE AUTHORITY = GS
1871	7 APR 1980	04:52:53.8	46.194N	122.174W			3.50ML	5			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 3 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. MAGNITUDE AUTHORITY = GS
1872	7 APR 1980	06:45:19.2	46.225N	122.177W			4.60MB	4			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 24 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 4.50ML, MAGNITUDE AUTHORITY = GS
1873	7 APR 1980	10:29:03.6	46.211N	122.178W			3.20ML	6			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 5 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. MAGNITUDE AUTHORITY = GS
1874	7 APR 1980	15:05:32.7	46.234N	122.206W			4.90MB	5			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 29 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 4.70ML, MAGNITUDE AUTHORITY = GS
1875	7 APR 1980	22:50:46.4	46.210N	122.183W			3.40ML	4			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 5 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.40ML, MAGNITUDE AUTHORITY = GS
1876	8 APR 1980	02:18:47.1	46.217N	122.191W			3.50ML	5			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 6 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.50ML, MAGNITUDE AUTHORITY = GS

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
1877	8 APR 1980	04:46:58.3	46.217N	122.184W			3.80ML	7			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 11 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.80ML, MAGNITUDE AUTHORITY = GS
1878	8 APR 1980	06:07:04.6	46.218N	122.186W			4.70MB	3			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 21 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 4.50ML, MAGNITUDE AUTHORITY = GS
1879	8 APR 1980	12:29:14.8	46.178N	122.157W			3.20ML	7			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 8 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.20ML, MAGNITUDE AUTHORITY = GS
1880	8 APR 1980	13:40:56.3	46.219N	122.176W			3.20ML	3			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 9 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.20ML, MAGNITUDE AUTHORITY = GS
1881	8 APR 1980	13:42:27.1	46.208N	122.180W			3.50ML	5			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 6 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.50ML, MAGNITUDE AUTHORITY = GS
1882	8 APR 1980	14:37:32.5	46.220N	122.184W			3.20ML	3			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 6 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.20ML, MAGNITUDE AUTHORITY = GS
1883	8 APR 1980	15:47:29.7	46.218N	122.187W			3.50ML	2			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 6 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.50ML, MAGNITUDE AUTHORITY = GS
1884	8 APR 1980	19:29:02.8	46.206N	122.171W			4.30MB	4			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 15 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 4.40ML, MAGNITUDE AUTHORITY = GS
1885	8 APR 1980	22:10:15.4	46.232N	122.176W			3.40ML	2			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 6 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.40ML, MAGNITUDE AUTHORITY = GS
1886	8 APR 1980	22:13:50.0	46.212N	122.191W			4.40MB	4			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 17 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 4.20ML, MAGNITUDE AUTHORITY = GS

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG	SM	H (KM)	DIS (KM)	Q	S	L O C A T I O N A N D C O M M E N T S
1887	9 APR 1980	03:25:20.5	46.198N	122.183W			3.20ML		4			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 7 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.20ML, MAGNITUDE AUTHORITY = GS
1888	9 APR 1980	03:28:51.4	46.211N	122.186W			3.40ML		4			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 5 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.40ML, MAGNITUDE AUTHORITY = GS
1889	9 APR 1980	07:04:47.4	46.209N	122.183W			3.30ML		3			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 5 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.30ML, MAGNITUDE AUTHORITY = GS
1890	9 APR 1980	09:01:44.2	46.216N	122.182W			4.20MB		3			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 14 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 4.20ML, MAGNITUDE AUTHORITY = GS
1891	9 APR 1980	10:13:20.3	46.220N	122.154W			4.90MB		4			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 25 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 4.50ML, MAGNITUDE AUTHORITY = GS
1892	9 APR 1980	11:55:26.0	46.206N	122.166W			4.10MB		4			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 7 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.40ML, MAGNITUDE AUTHORITY = GS
1893	9 APR 1980	22:29:03.5	46.211N	122.180W			3.70ML		4			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 5 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.70ML, MAGNITUDE AUTHORITY = GS
1894	10 APR 1980	00:25:47.9	46.220N	122.167W			4.40MB		4			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 21 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 4.30ML, MAGNITUDE AUTHORITY = GS
1895	10 APR 1980	00:44:15.7	46.228N	122.182W			4.70MB		4			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 29 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 4.60ML, MAGNITUDE AUTHORITY = GS
1896	10 APR 1980	11:06:23.5	49.372N	127.734W			4.50MB		10			N	ORIGINAL DATA SOURCE = GS MAGNITUDE= 4.0MS MS COMPUTED FROM LONG-PERIOD VERTICAL COMPONENT. HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSIST. 35 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION.

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG	SM	H (KM)	DIS (KM)	Q S	LOCATION AND COMMENTS
1897	10 APR 1980	14:16:15.3	46.217N	122.177W			4.70MB		2		N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. MAGNITUDE= 3.3MS MS COMPUTED FROM LONG-PERIOD VERTICAL COMPONENT. 23 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 4.50ML, MAGNITUDE AUTHORITY = GS
1898	10 APR 1980	21:08:26.2	46.211N	122.182W			3.70ML		4		N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 6 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.70ML, MAGNITUDE AUTHORITY = GS
1899	11 APR 1980	00:51:48.3	46.209N	122.181W			3.40ML		4		N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 6 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.40ML, MAGNITUDE AUTHORITY = GS
1900	11 APR 1980	01:45:05.6	49.366N	127.705W			4.90MB		10		N	ORIGINAL DATA SOURCE = GS MAGNITUDE= 4.9MS MS COMPUTED FROM LONG-PERIOD VERTICAL COMPONENT. HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSIST. 92 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION.
1901	11 APR 1980	03:36:04.3	46.214N	122.179W			3.20ML		2		N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 5 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.20ML, MAGNITUDE AUTHORITY = GS
1902	11 APR 1980	04:07:33.0	49.392N	127.745W			4.30MB		10		N	ORIGINAL DATA SOURCE = GS MAGNITUDE= 3.6MS MS COMPUTED FROM LONG-PERIOD VERTICAL COMPONENT. HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSIST. 31 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION.
1903	11 APR 1980	04:45:22.1	46.234N	122.171W			4.70MB		4		N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 24 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 4.40ML, MAGNITUDE AUTHORITY = GS
1904	11 APR 1980	07:42:01.8	46.214N	122.191W			4.30MB		2		N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 12 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.60ML, MAGNITUDE AUTHORITY = GS
1905	11 APR 1980	14:52:25.1	46.210N	122.184W			3.60ML		3		N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 7 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.60ML, MAGNITUDE AUTHORITY = GS
1906	11 APR 1980	18:01:10.6	46.206N	122.180W			3.70ML		1		N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM.

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
												9 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.70ML, MAGNITUDE AUTHORITY = GS
1907	11 APR 1980	21:56:31.2	46.209N	122.168W			3.50ML	4			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 5 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.50ML, MAGNITUDE AUTHORITY = GS
1908	11 APR 1980	23:52:00.0	46.222N	122.164W			4.40MB	3			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 32 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 4.80ML, MAGNITUDE AUTHORITY = GS
1909	12 APR 1980	05:16:22.3	46.224N	122.180W			4.30MB	5			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 29 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 4.20ML, MAGNITUDE AUTHORITY = GS
1910	12 APR 1980	15:08:11.8	46.214N	122.180W			3.80MB	1			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 8 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.60ML, MAGNITUDE AUTHORITY = GS
1911	12 APR 1980	20:45:34.2	46.214N	122.180W			3.60ML	1			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 6 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.60ML, MAGNITUDE AUTHORITY = GS
1912	12 APR 1980	21:25:19.7	46.220N	122.184W			3.40ML	2			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 5 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.40ML, MAGNITUDE AUTHORITY = GS
1913	12 APR 1980	22:29:12.0	46.225N	122.181W			4.20MB	5			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 21 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 4.30ML, MAGNITUDE AUTHORITY = GS
1914	13 APR 1980	01:25:56.1	46.214N	122.182W			4.20MB	2			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 9 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.60ML, MAGNITUDE AUTHORITY = GS
1915	13 APR 1980	03:03:23.0	46.252N	122.201W			3.50ML	1			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 5 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.50ML, MAGNITUDE AUTHORITY = GS
1916	13 APR 1980	06:13:18.5	46.213N	122.193W			3.80MB	3			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 8 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.60ML, MAGNITUDE AUTHORITY = GS

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
1917	13 APR 1980	07:39:32.2	46.219N	122.184W			3.10ML	2			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 5 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.10ML, MAGNITUDE AUTHORITY = GS
1918	13 APR 1980	08:36:18.8	46.222N	122.176W			4.70MB	1			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 28 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 4.50ML, MAGNITUDE AUTHORITY = GS
1919	13 APR 1980	09:40:46.5	46.220N	122.178W			3.50ML	2			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 6 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.50ML, MAGNITUDE AUTHORITY = GS
1920	13 APR 1980	12:06:20.7	46.222N	122.171W			3.50ML	1			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 7 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.50ML, MAGNITUDE AUTHORITY = GS
1921	13 APR 1980	17:35:41.8	46.211N	122.191W			4.20MB	4			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 15 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 4.10ML, MAGNITUDE AUTHORITY = GS
1922	13 APR 1980	18:58:21.7	46.222N	122.174W			4.00MB	4			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 17 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 4.30ML, MAGNITUDE AUTHORITY = GS
1923	13 APR 1980	23:57:32.1	46.216N	122.175W			3.60ML	3			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 7 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.60ML, MAGNITUDE AUTHORITY = GS
1924	14 APR 1980	03:01:02.5	46.210N	122.189W			4.00MB	4			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 15 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.70ML, MAGNITUDE AUTHORITY = GS
1925	14 APR 1980	06:53:38.9	46.225N	122.174W			4.40MB	3			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 12 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.70ML, MAGNITUDE AUTHORITY = GS
1926	14 APR 1980	06:59:22.3	46.223N	122.188W			4.70MB	4			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 34 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 4.50ML, MAGNITUDE AUTHORITY = GS

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
1927	14 APR 1980	08:42:11.6	46.213N	122.168W			3.40ML	3			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 5 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.40ML, MAGNITUDE AUTHORITY = GS
1928	14 APR 1980	12:28:43.6	46.219N	122.176W			4.20MB	4			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 16 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.90ML, MAGNITUDE AUTHORITY = GS
1929	14 APR 1980	13:49:04.1	46.209N	122.190W			4.80MB	3			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. MAGNITUDE= 5.3MS MS COMPUTED FROM LONG-PERIOD VERTICAL COMPONENT. 30 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 4.70ML, MAGNITUDE AUTHORITY = GS
1930	14 APR 1980	15:30:30.6	46.233N	122.205W			3.40ML	1			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 7 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.40ML, MAGNITUDE AUTHORITY = GS
1931	14 APR 1980	22:28:53.3	46.225N	122.190W			3.40ML	2			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 4 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.40ML, MAGNITUDE AUTHORITY = GS
1932	15 APR 1980	00:37:05.4	46.217N	122.158W			4.00ML	4			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 8 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 4.00ML, MAGNITUDE AUTHORITY = GS
1933	15 APR 1980	02:26:18.6	46.233N	122.210W			4.20MB	1			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 11 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.70ML, MAGNITUDE AUTHORITY = GS
1934	15 APR 1980	06:58:22.4	46.221N	122.198W			4.50MB	6			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 24 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 4.30ML, MAGNITUDE AUTHORITY = GS
1935	15 APR 1980	07:35:25.8	46.216N	122.196W			3.90MB	4			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 7 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.40ML, MAGNITUDE AUTHORITY = GS
1936	15 APR 1980	11:53:53.7	46.200N	122.188W			3.70ML	4			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 9 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.70ML, MAGNITUDE AUTHORITY = GS

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
1937	15 APR 1980	13:56:24.7	46.214N	122.193W			3.40ML	3			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 6 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.40ML, MAGNITUDE AUTHORITY = GS
1938	15 APR 1980	15:27:51.3	46.216N	122.190W			3.70MB	4			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 8 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.30ML, MAGNITUDE AUTHORITY = GS
1939	15 APR 1980	16:12:04.8	46.212N	122.182W			3.50ML	1			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 7 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.50ML, MAGNITUDE AUTHORITY = GS
1940	15 APR 1980	17:54:54.3	46.220N	122.176W			4.90MB	3			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. MAGNITUDE= 3.6MS MS COMPUTED FROM LONG-PERIOD VERTICAL COMPONENT. 34 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 4.70ML, MAGNITUDE AUTHORITY = GS
1941	15 APR 1980	21:55:49.0	46.427N	121.929W			4.10MB	5			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSIST. 11 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 4.00ML, MAGNITUDE AUTHORITY = GS
1942	16 APR 1980	01:54:45.9	46.196N	122.197W			3.50ML	6			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 4 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.50ML, MAGNITUDE AUTHORITY = GS
1943	16 APR 1980	04:58:57.4	46.215N	122.185W			3.40ML	4			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 7 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.40ML, MAGNITUDE AUTHORITY = GS
1944	16 APR 1980	06:25:52.5	46.221N	122.196W			4.10MB	4			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 8 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.20ML, MAGNITUDE AUTHORITY = GS
1945	16 APR 1980	11:47:28.6	46.214N	122.188W			3.80MB	3			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 9 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.50ML, MAGNITUDE AUTHORITY = GS
1946	16 APR 1980	15:22:05.6	46.225N	122.175W			4.90MB	3			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 37 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION.

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG SM	H (KM)	DIS (KM)	Q S	LOCATION AND COMMENTS
											4.90ML, MAGNITUDE AUTHORITY = GS
1947	16 APR 1980	15:40:23.5	46.223N	122.167W			4.80MB	4		N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 21 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 4.50ML, MAGNITUDE AUTHORITY = GS
1948	16 APR 1980	22:46:24.9	46.219N	122.181W			4.30MB	1		N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 14 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.50ML, MAGNITUDE AUTHORITY = GS
1949	17 APR 1980	04:26:16.0	46.219N	122.190W			4.10MB	4		N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 29 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 4.30ML, MAGNITUDE AUTHORITY = GS
1950	17 APR 1980	07:06:47.1	46.204N	122.173W			4.00MB	1		N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. MAGNITUDE= 3.3MS MS COMPUTED FROM LONG-PERIOD VERTICAL COMPONENT. 11 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.50ML, MAGNITUDE AUTHORITY = GS
1951	17 APR 1980	08:58:44.8	46.210N	122.193W			3.30ML	2		N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 6 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.30ML, MAGNITUDE AUTHORITY = GS
1952	17 APR 1980	17:43:22.6	46.221N	122.184W			4.70MB	3		N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. MAGNITUDE= 3.6MS MS COMPUTED FROM LONG-PERIOD VERTICAL COMPONENT. 26 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 4.60ML, MAGNITUDE AUTHORITY = GS
1953	18 APR 1980	00:51:06.0	46.222N	122.192W			3.70MB	1		N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 9 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.40ML, MAGNITUDE AUTHORITY = GS
1954	18 APR 1980	00:53:40.5	46.217N	122.178W			4.70MB	2		N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 16 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 4.40ML, MAGNITUDE AUTHORITY = GS
1955	18 APR 1980	02:24:31.3	46.210N	122.194W			4.10MB	3		N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 8 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.40ML, MAGNITUDE AUTHORITY = GS

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CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG	SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
1956	18 APR 1980	08:28:09.2	46.219N	122.186W			4.30MB		3			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 10 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.40ML, MAGNITUDE AUTHORITY = GS
1957	18 APR 1980	09:23:39.1	46.212N	122.186W			3.90MB		3			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 7 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.70ML, MAGNITUDE AUTHORITY = GS
1958	18 APR 1980	10:45:22.4	46.217N	122.187W			4.00MB		3			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 7 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.40ML, MAGNITUDE AUTHORITY = GS
1959	18 APR 1980	12:15:43.9	46.229N	122.183W			3.40ML		4			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 5 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.40ML, MAGNITUDE AUTHORITY = GS
1960	18 APR 1980	13:08:29.4	46.210N	122.178W			3.60ML		4			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 5 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.60ML, MAGNITUDE AUTHORITY = GS
1961	18 APR 1980	15:53:13.9	46.208N	122.203W			3.30ML		4			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 7 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.30ML, MAGNITUDE AUTHORITY = GS
1962	18 APR 1980	19:16:25.4	46.215N	122.197W			3.50ML		5			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 5 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.50ML, MAGNITUDE AUTHORITY = GS
1963	18 APR 1980	21:16:02.2	46.220N	122.185W			4.80MB		4			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 36 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 4.70ML, MAGNITUDE AUTHORITY = GS
1964	18 APR 1980	22:27:14.5	46.221N	122.180W			4.50MB		4			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 26 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 4.10ML, MAGNITUDE AUTHORITY = GS
1965	19 APR 1980	02:37:26.3	46.216N	122.184W			4.10MB		2			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 8 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.60ML, MAGNITUDE AUTHORITY = GS

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG	SM	H (KM)	DIS (KM)	Q	S	L O C A T I O N A N D C O M M E N T S
1966	19 APR 1980	06:03:12.6	46.214N	122.194W			3.60ML		2			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 7 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.60ML, MAGNITUDE AUTHORITY = GS
1967	19 APR 1980	08:07:18.1	46.219N	122.191W			4.00MB		3			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 12 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.80ML, MAGNITUDE AUTHORITY = GS
1968	19 APR 1980	14:53:14.5	46.226N	122.186W			3.60ML		1			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 7 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.60ML, MAGNITUDE AUTHORITY = GS
1969	19 APR 1980	17:48:35.7	46.226N	122.171W			4.30MB		3			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 15 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.90ML, MAGNITUDE AUTHORITY = GS
1970	19 APR 1980	19:07:51.2	46.222N	122.198W			3.90MB		5			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 13 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.80ML, MAGNITUDE AUTHORITY = GS
1971	19 APR 1980	19:17:58.3	46.205N	122.172W			3.50ML		2			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 10 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.50ML, MAGNITUDE AUTHORITY = GS
1972	19 APR 1980	20:41:38.7	46.213N	122.178W			3.40ML		2			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 10 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.40ML, MAGNITUDE AUTHORITY = GS
1973	19 APR 1980	22:28:28.2	46.226N	122.177W			4.70MB		3			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 31 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 4.60ML, MAGNITUDE AUTHORITY = GS
1974	20 APR 1980	00:13:41.2	46.208N	122.183W			4.10MB		4			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 9 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.40ML, MAGNITUDE AUTHORITY = GS
1975	20 APR 1980	04:53:02.6	46.220N	122.188W			4.10MB		2			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 14 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.70ML, MAGNITUDE AUTHORITY = GS

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
1976	20 APR 1980	05:04:50.3	46.219N	122.194W			4.00MB	4			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 13 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.80ML, MAGNITUDE AUTHORITY = GS
1977	20 APR 1980	08:08:08.7	46.226N	122.190W			3.90MB	1			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 11 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.60ML, MAGNITUDE AUTHORITY = GS
1978	20 APR 1980	10:25:25.2	46.218N	122.172W			4.10MB	2			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 17 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 4.00ML, MAGNITUDE AUTHORITY = GS
1979	20 APR 1980	11:59:31.1	46.214N	122.189W			4.10MB	3			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 10 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.60ML, MAGNITUDE AUTHORITY = GS
1980	20 APR 1980	13:29:24.3	46.213N	122.186W			3.80MB	3			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 8 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.50ML, MAGNITUDE AUTHORITY = GS
1981	20 APR 1980	17:53:34.1	46.213N	122.190W			3.70MB	3			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 7 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.30ML, MAGNITUDE AUTHORITY = GS
1982	20 APR 1980	19:19:33.0	46.215N	122.185W			4.80MB	5			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. MAGNITUDE= 3.9MS MS COMPUTED FROM LONG-PERIOD VERTICAL COMPONENT. 34 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 4.80ML, MAGNITUDE AUTHORITY = GS
1983	20 APR 1980	20:12:19.5	46.210N	122.190W			4.20MB	4			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 5 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.50ML, MAGNITUDE AUTHORITY = GS
1984	20 APR 1980	22:03:48.7	46.218N	122.171W			4.10MB	3			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 18 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 4.00ML, MAGNITUDE AUTHORITY = GS
1985	21 APR 1980	03:23:33.8	46.217N	122.197W			4.10MB	3			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 8 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.50ML, MAGNITUDE AUTHORITY = GS

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG SM	H (KM)	DIS (KM)	Q S	LOCATION AND COMMENTS
1986	21 APR 1980	05:17:52.4	46.218N	122.179W			4.40MB	2		N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 10 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.70ML, MAGNITUDE AUTHORITY = GS
1987	21 APR 1980	15:13:55.5	46.113N	122.169W			4.50MB	10		N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 38 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 4.50ML, MAGNITUDE AUTHORITY = GS
1988	21 APR 1980	19:52:08.8	46.218N	122.173W			4.00ML	4		N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 11 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 4.00ML, MAGNITUDE AUTHORITY = GS
1989	21 APR 1980	20:33:59.5	46.221N	122.184W			3.50ML	2		N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 6 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.50ML, MAGNITUDE AUTHORITY = GS
1990	22 APR 1980	06:11:55.8	46.217N	122.180W			3.80ML	5		N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 10 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.80ML, MAGNITUDE AUTHORITY = GS
1991	22 APR 1980	10:25:05.6	46.221N	122.192W			4.20MB	3		N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 18 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.90ML, MAGNITUDE AUTHORITY = GS
1992	22 APR 1980	16:14:57.4	43.830N	127.908W			4.40MB	15		N	ORIGINAL DATA SOURCE = GS HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSIST. 21 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION.
1993	22 APR 1980	19:28:18.8	46.217N	122.181W			4.60MB	4		N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 32 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 4.60ML, MAGNITUDE AUTHORITY = GS
1994	22 APR 1980	22:04:10.9	46.215N	122.170W			4.10MB	5		N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 14 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION.
1995	23 APR 1980	03:01:04.9	46.216N	122.194W			3.40ML	2		N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 6 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.40ML, MAGNITUDE AUTHORITY = GS
1996	23 APR 1980	06:04:53.9	46.213N	122.176W			3.90MB	3		N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 7 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION.

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
1997	23 APR 1980	06:44:41.7	46.212N	122.181W			3.30ML	1			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 6 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.30ML, MAGNITUDE AUTHORITY = GS
1998	23 APR 1980	08:42:42.9	46.211N	122.179W			3.20ML	2			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 7 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.20ML, MAGNITUDE AUTHORITY = GS
1999	23 APR 1980	12:28:39.3	46.213N	122.186W			3.30ML	2			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 7 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.30ML, MAGNITUDE AUTHORITY = GS
2000	23 APR 1980	12:30:53.1	46.260N	122.012W			4.50MB	5			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSIST. 17 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 4.70ML, MAGNITUDE AUTHORITY = GS
2001	23 APR 1980	13:08:15.4	46.217N	122.202W			3.40ML	2			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 4 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.40ML, MAGNITUDE AUTHORITY = GS
2002	23 APR 1980	15:18:01.1	46.215N	122.178W			4.20MB	4			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 21 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 4.20ML, MAGNITUDE AUTHORITY = GS
2003	23 APR 1980	15:31:02.9	46.197N	122.178W			3.50ML	4			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 6 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.50ML, MAGNITUDE AUTHORITY = GS
2004	23 APR 1980	23:06:50.5	46.196N	122.199W			3.40ML	4			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 5 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.40ML, MAGNITUDE AUTHORITY = GS
2005	24 APR 1980	01:41:05.3	46.212N	122.200W			3.50ML	1			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 5 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.50ML, MAGNITUDE AUTHORITY = GS
2006	24 APR 1980	04:21:41.2	46.211N	122.192W			3.60MB	3			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 6 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.40ML, MAGNITUDE AUTHORITY = GS

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG	SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
2007	24 APR 1980	09:50:09.5	46.217N	122.180W			4.00	MB	4			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 18 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.90ML, MAGNITUDE AUTHORITY = GS
2008	24 APR 1980	10:50:42.8	46.224N	122.196W			3.40	ML	3			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 5 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.40ML, MAGNITUDE AUTHORITY = GS
2009	24 APR 1980	13:32:07.7	46.203N	122.172W			3.50	ML	5			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 5 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.50ML, MAGNITUDE AUTHORITY = GS
2010	24 APR 1980	15:31:37.9	46.214N	122.189W			3.50	ML	3			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 6 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.50ML, MAGNITUDE AUTHORITY = GS
2011	24 APR 1980	17:34:10.4	46.220N	122.185W			4.70	MB	4			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. MAGNITUDE= 3.8MS MS COMPUTED FROM LONG-PERIOD VERTICAL COMPONENT. 42 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 4.80ML, MAGNITUDE AUTHORITY = GS
2012	24 APR 1980	19:00:42.2	46.213N	122.186W			3.40	ML	3			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 6 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.40ML, MAGNITUDE AUTHORITY = GS
2013	24 APR 1980	23:07:53.7	46.216N	122.182W			3.70	ML	4			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 8 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.70ML, MAGNITUDE AUTHORITY = GS
2014	25 APR 1980	00:27:57.7	46.207N	122.194W			3.60	ML	3			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 11 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.60ML, MAGNITUDE AUTHORITY = GS
2015	25 APR 1980	04:55:31.9	46.212N	122.191W			3.30	ML	3			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 5 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.30ML, MAGNITUDE AUTHORITY = GS
2016	25 APR 1980	11:00:21.8	46.211N	122.186W			3.90	MB	3			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 16 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.60ML, MAGNITUDE AUTHORITY = GS

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
2017	25 APR 1980	11:03:43.6	46.220N	122.179W			3.50ML	3			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 2 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.50ML, MAGNITUDE AUTHORITY = GS
2018	25 APR 1980	23:20:27.9	46.257N	122.180W			5.00MB	5			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSIST. 20 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION.
2019	26 APR 1980	12:16:55.8	46.214N	122.182W			3.50ML	1			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 7 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.50ML, MAGNITUDE AUTHORITY = GS
2020	26 APR 1980	14:26:00.3	46.220N	122.184W			3.90MB	4			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 11 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.60ML, MAGNITUDE AUTHORITY = GS
2021	26 APR 1980	15:53:59.9	46.215N	122.178W			3.70ML	1			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 9 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.70ML, MAGNITUDE AUTHORITY = GS
2022	27 APR 1980	01:15:41.5	46.214N	122.182W			3.90MB	4			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 13 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.80ML, MAGNITUDE AUTHORITY = GS
2023	27 APR 1980	01:59:56.2	46.214N	122.181W			3.90MB	2			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 16 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.80ML, MAGNITUDE AUTHORITY = GS
2024	27 APR 1980	06:00:27.0	47.367N	122.550W		IV	3.20ML	20			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. REPORTED FELT INFORMATION. 5 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.20ML, MAGNITUDE AUTHORITY = GS
2025	27 APR 1980	07:15:17.1	46.204N	122.181W			3.80MB	7			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 10 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.50ML, MAGNITUDE AUTHORITY = GS
2026	27 APR 1980	07:26:21.3	46.220N	122.184W			4.50MB	4			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 40 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 4.60ML, MAGNITUDE AUTHORITY = GS

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG	SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
2027	27 APR 1980	12:34:37.6	46.222N	122.194W			4.00MB		1			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 8 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.60ML, MAGNITUDE AUTHORITY = GS
2028	27 APR 1980	14:48:20.3	46.218N	122.182W			3.90ML		4			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 14 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.90ML, MAGNITUDE AUTHORITY = GS
2029	27 APR 1980	17:04:39.4	46.212N	122.195W			3.50ML		2			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 7 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.50ML, MAGNITUDE AUTHORITY = GS
2030	27 APR 1980	20:54:19.8	46.212N	122.181W			4.10MB		2			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 9 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.50ML, MAGNITUDE AUTHORITY = GS
2031	27 APR 1980	23:40:47.6	46.212N	122.183W			3.40ML		4			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 6 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.40ML, MAGNITUDE AUTHORITY = GS
2032	28 APR 1980	03:49:33.5	46.220N	122.180W			4.40MB		4			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 34 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 4.60ML, MAGNITUDE AUTHORITY = GS
2033	28 APR 1980	05:15:54.1	46.225N	122.180W			4.00MB		2			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 20 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.90ML, MAGNITUDE AUTHORITY = GS
2034	28 APR 1980	12:30:54.8	46.209N	122.188W			3.70MB		1			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 9 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.60ML, MAGNITUDE AUTHORITY = GS
2035	28 APR 1980	12:38:41.9	46.222N	122.178W			4.00MB		2			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 9 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.80ML, MAGNITUDE AUTHORITY = GS
2036	28 APR 1980	15:09:07.7	46.212N	122.180W			3.50ML		3			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 7 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.50ML, MAGNITUDE AUTHORITY = GS

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG	SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
2037	28 APR 1980	17:07:11.9	46.226N	122.188W			3.30ML		1				N ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 6 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.30ML, MAGNITUDE AUTHORITY = GS
2038	28 APR 1980	23:52:35.6	46.214N	122.184W			3.60ML		3				N ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 8 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.60ML, MAGNITUDE AUTHORITY = GS
2039	29 APR 1980	03:37:36.4	46.215N	122.186W			4.00MB		4				N ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 7 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.40ML, MAGNITUDE AUTHORITY = GS
2040	29 APR 1980	04:24:30.2	46.222N	122.170W			4.70MB		2				N ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. MAGNITUDE= 3.6MS MS COMPUTED FROM LONG-PERIOD VERTICAL COMPONENT. 34 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 4.60ML, MAGNITUDE AUTHORITY = GS
2041	29 APR 1980	06:20:50.7	46.227N	122.212W			4.20MB		2				N ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 9 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.60ML, MAGNITUDE AUTHORITY = GS
2042	29 APR 1980	06:22:38.9	46.232N	122.192W			4.70MB		2				N ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 28 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 4.50ML, MAGNITUDE AUTHORITY = GS
2043	29 APR 1980	08:59:23.6	46.204N	122.226W			3.40ML		5				N ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 9 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.40ML, MAGNITUDE AUTHORITY = GS
2044	29 APR 1980	12:41:36.4	46.217N	122.187W			4.30MB		5				N ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 16 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 4.10ML, MAGNITUDE AUTHORITY = GS
2045	29 APR 1980	12:46:08.1	46.219N	122.188W			3.60ML		2				N ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 3 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.60ML, MAGNITUDE AUTHORITY = GS
2046	29 APR 1980	17:46:06.0	46.225N	122.190W			3.60ML		2				N ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 6 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.60ML, MAGNITUDE AUTHORITY = GS

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
2047	30 APR 1980	00:34:10.6	46.209N	122.168W			4.20MB	1			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 9 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.70ML, MAGNITUDE AUTHORITY = GS
2048	30 APR 1980	05:09:02.7	46.220N	122.174W			4.80MB	3			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. MAGNITUDE= 3.8MS MS COMPUTED FROM LONG-PERIOD VERTICAL COMPONENT. 39 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 4.70ML, MAGNITUDE AUTHORITY = GS
2049	30 APR 1980	07:42:09.2	46.218N	122.187W			4.10MB	4			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 22 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 4.20ML, MAGNITUDE AUTHORITY = GS
2050	30 APR 1980	07:54:59.1	46.215N	122.163W			4.10MB	2			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 6 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.60ML, MAGNITUDE AUTHORITY = GS
2051	30 APR 1980	20:50:38.6	46.212N	122.192W			3.90MB	3			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 13 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.60ML, MAGNITUDE AUTHORITY = GS
2052	1 MAY 1980	04:46:15.6	46.218N	122.186W			4.30MB	3			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 26 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 4.20ML, MAGNITUDE AUTHORITY = GS
2053	1 MAY 1980	04:53:05.4	46.227N	122.196W			4.00MB	2			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 5 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.40ML, MAGNITUDE AUTHORITY = GS
2054	1 MAY 1980	06:18:32.3	46.212N	122.195W			4.20MB	3			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 13 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.70ML, MAGNITUDE AUTHORITY = GS
2055	1 MAY 1980	10:59:03.4	46.193N	122.183W			3.70MB	3			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 14 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.60ML, MAGNITUDE AUTHORITY = GS
2056	1 MAY 1980	12:46:12.3	46.214N	122.178W			3.20ML	3			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 5 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.20ML, MAGNITUDE AUTHORITY = GS

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
2057	1 MAY 1980	19:27:15.7	46.209N	122.182W			4.30MB	1			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 19 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 4.30ML, MAGNITUDE AUTHORITY = GS
2058	1 MAY 1980	21:31:09.7	46.219N	122.165W			3.70MB	1			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 8 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.70ML, MAGNITUDE AUTHORITY = GS
2059	1 MAY 1980	23:01:10.8	46.219N	122.182W			3.30ML	2			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 5 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.30ML, MAGNITUDE AUTHORITY = GS
2060	2 MAY 1980	00:57:09.4	46.226N	122.196W			3.30ML	1			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 4 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.30ML, MAGNITUDE AUTHORITY = GS
2061	2 MAY 1980	05:12:19.0	46.222N	122.170W			4.30MB	2			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 16 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 4.00ML, MAGNITUDE AUTHORITY = GS
2062	2 MAY 1980	08:36:31.6	46.213N	122.200W			4.00MB	2			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 10 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.60ML, MAGNITUDE AUTHORITY = GS
2063	2 MAY 1980	09:52:25.4	46.212N	122.189W			3.40ML	3			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 5 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.40ML, MAGNITUDE AUTHORITY = GS
2064	2 MAY 1980	12:52:17.5	46.189N	122.147W			3.80ML	10			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 10 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.80ML, MAGNITUDE AUTHORITY = GS
2065	2 MAY 1980	13:02:29.6	46.232N	122.196W			4.60MB	1			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. MAGNITUDE= 3.6MS MS COMPUTED FROM LONG-PERIOD VERTICAL COMPONENT. 30 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 4.50ML, MAGNITUDE AUTHORITY = GS
2066	2 MAY 1980	18:59:47.4	46.211N	122.185W			3.40ML	3			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 5 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.40ML, MAGNITUDE AUTHORITY = GS

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG	SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
2067	3 MAY 1980	05:00:46.0	46.207N	122.181W			4.40MB		10			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. MAGNITUDE= 4.2MS MS COMPUTED FROM LONG-PERIOD VERTICAL COMPONENT. 34 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 4.50ML, MAGNITUDE AUTHORITY = GS
2068	3 MAY 1980	05:05:30.5	46.231N	122.189W			4.50MB		2			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 13 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 4.10ML, MAGNITUDE AUTHORITY = GS
2069	3 MAY 1980	06:47:50.8	46.209N	122.187W			3.60ML		3			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 3 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.60ML, MAGNITUDE AUTHORITY = GS
2070	3 MAY 1980	13:12:13.7	46.430N	121.945W			4.10MB		1			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSIST. 13 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.90ML, MAGNITUDE AUTHORITY = GS
2071	3 MAY 1980	15:40:57.2	46.218N	122.199W			3.80MB		2			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 13 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.80ML, MAGNITUDE AUTHORITY = GS
2072	3 MAY 1980	20:45:38.0	46.213N	122.170W			3.70ML		1			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 6 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.70ML, MAGNITUDE AUTHORITY = GS
2073	4 MAY 1980	07:47:28.9	46.220N	122.187W			3.60ML		1			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 7 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.60ML, MAGNITUDE AUTHORITY = GS
2074	4 MAY 1980	11:58:27.4	46.226N	122.183W			4.60MB		2			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. MAGNITUDE= 4.0MS MS COMPUTED FROM LONG-PERIOD VERTICAL COMPONENT. 36 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 4.60ML, MAGNITUDE AUTHORITY = GS
2075	4 MAY 1980	17:34:30.7	46.220N	122.187W			3.40ML		1			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 8 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.40ML, MAGNITUDE AUTHORITY = GS

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG	SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
2076	4 MAY 1980	21:39:22.1	46.211N	122.186W			4.20MB		2			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 8 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.50ML, MAGNITUDE AUTHORITY = GS
2077	5 MAY 1980	01:53:30.5	46.224N	122.198W			4.00MB		1			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 8 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.70ML, MAGNITUDE AUTHORITY = GS
2078	5 MAY 1980	04:44:32.2	46.214N	122.182W			3.40ML		2			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 4 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.40ML, MAGNITUDE AUTHORITY = GS
2079	5 MAY 1980	05:43:04.1	46.216N	122.171W			4.60MB		3			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. MAGNITUDE= 3.7MS MS COMPUTED FROM LONG-PERIOD VERTICAL COMPONENT. 38 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 4.60ML, MAGNITUDE AUTHORITY = GS
2080	5 MAY 1980	07:27:30.6	46.207N	122.157W			3.60ML		1			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 10 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.60ML, MAGNITUDE AUTHORITY = GS
2081	5 MAY 1980	09:12:54.4	46.220N	122.172W			4.40MB		2			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 23 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 4.00ML, MAGNITUDE AUTHORITY = GS
2082	5 MAY 1980	09:22:15.9	46.207N	122.201W			3.80MB		11			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 7 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.40ML, MAGNITUDE AUTHORITY = GS
2083	5 MAY 1980	10:44:57.8	46.216N	122.172W			3.30ML		1			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 7 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.30ML, MAGNITUDE AUTHORITY = GS
2084	5 MAY 1980	13:19:08.3	46.215N	122.192W			3.60ML		6			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 8 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.60ML, MAGNITUDE AUTHORITY = GS
2085	5 MAY 1980	16:13:51.9	46.209N	122.179W			4.40MB		1			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 6 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.50ML, MAGNITUDE AUTHORITY = GS

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG	SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
2086	6 MAY 1980	00:03:31.6	46.220N	122.171W			4.00ML		4			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 11 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 4.00ML, MAGNITUDE AUTHORITY = GS
2087	6 MAY 1980	08:15:01.8	46.220N	122.194W			4.20MB		1			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 11 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.80ML, MAGNITUDE AUTHORITY = GS
2088	6 MAY 1980	15:30:44.8	46.383N	121.900W			4.00MB		1			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSIST. 9 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.70ML, MAGNITUDE AUTHORITY = GS
2089	6 MAY 1980	17:04:50.9	46.357N	122.076W			4.70MB		1			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. MAGNITUDE= 4.2MS MS COMPUTED FROM LONG-PERIOD VERTICAL COMPONENT. HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSIST. 26 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 4.70ML, MAGNITUDE AUTHORITY = GS
2090	6 MAY 1980	19:22:28.4	46.219N	122.174W			4.60MB		3			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 18 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 4.20ML, MAGNITUDE AUTHORITY = GS
2091	7 MAY 1980	03:44:42.8	46.213N	122.187W			3.90MB		2			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 12 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.70ML, MAGNITUDE AUTHORITY = GS
2092	7 MAY 1980	08:52:33.1	46.218N	122.173W			4.00MB		1			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 8 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.60ML, MAGNITUDE AUTHORITY = GS
2093	7 MAY 1980	11:09:18.0	46.221N	122.188W			4.70MB		1			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 26 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 4.60ML, MAGNITUDE AUTHORITY = GS
2094	8 MAY 1980	01:19:57.0	46.212N	122.184W			4.00MB		1			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 10 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.60ML, MAGNITUDE AUTHORITY = GS
2095	8 MAY 1980	07:46:49.1	46.064N	121.935W			3.90MB		10			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM.

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL INTEN (MM)	MAG SM	H (KM)	DIS (KM)	Q S	LOCATION AND COMMENTS
										13 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.80ML, MAGNITUDE AUTHORITY = GS
2096	8 MAY 1980	07:48:46.1	46.227N	122.169W		5.00MB	1		N	ORIGINAL DATA SOURCE = GS' EARTHQUAKE ASSOCIATED WITH VOLCANISM. MAGNITUDE= 4.0MS MS COMPUTED FROM LONG-PERIOD VERTICAL COMPONENT. 41 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 4.70ML, MAGNITUDE AUTHORITY = GS
2097	8 MAY 1980	08:47:55.4	46.219N	122.196W		3.60ML	1		N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 5 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.60ML, MAGNITUDE AUTHORITY = GS
2098	8 MAY 1980	09:03:40.0	46.222N	122.171W		4.20MB	2		N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 22 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 4.30ML, MAGNITUDE AUTHORITY = GS
2099	8 MAY 1980	10:05:38.4	46.228N	122.197W		4.20MB	4		N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 10 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.70ML, MAGNITUDE AUTHORITY = GS
2100	8 MAY 1980	15:31:48.9	46.221N	122.186W		3.60ML	1		N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 13 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.60ML, MAGNITUDE AUTHORITY = GS
2101	8 MAY 1980	19:27:30.0	46.218N	122.180W		3.80MD	1		N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 6 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.60ML, MAGNITUDE AUTHORITY = GS
2102	9 MAY 1980	00:55:02.4	46.213N	122.186W		4.20MB	1		N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 12 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.50ML, MAGNITUDE AUTHORITY = GS
2103	9 MAY 1980	04:31:58.1	46.213N	122.175W		3.50ML	1		N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 6 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.50ML, MAGNITUDE AUTHORITY = GS
2104	9 MAY 1980	07:01:01.3	46.224N	122.174W		4.80MD	2		N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 33 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 4.60ML, MAGNITUDE AUTHORITY = GS
2105	9 MAY 1980	08:32:30.5	46.215N	122.189W		3.30ML	1		N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM.

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG SM	H (KM)	DIS (KM)	Q	S	L O C A T I O N A N D C O M M E N T S
												7 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.30ML, MAGNITUDE AUTHORITY = GS
2106	9 MAY 1980	14:10:37.3	46.215N	122.174W			3.80MD	1			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 10 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.70ML, MAGNITUDE AUTHORITY = GS
2107	9 MAY 1980	18:06:26.5	46.221N	122.170W			4.40MB	2			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. MAGNITUDE= 3.7MS MS COMPUTED FROM LONG-PERIOD VERTICAL COMPONENT. 34 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 4.60ML, MAGNITUDE AUTHORITY = GS
2108	9 MAY 1980	21:29:35.8	46.208N	122.175W			3.60ML	1			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 7 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.60ML, MAGNITUDE AUTHORITY = GS
2109	10 MAY 1980	01:14:10.7	46.215N	122.182W			3.60ML	1			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 5 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.60ML, MAGNITUDE AUTHORITY = GS
2110	10 MAY 1980	05:50:04.0	46.220N	122.189W			4.20MB	1			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 10 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.70ML, MAGNITUDE AUTHORITY = GS
2111	10 MAY 1980	09:25:56.1	46.221N	122.188W			3.90MD	4			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 7 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.80ML, MAGNITUDE AUTHORITY = GS
2112	10 MAY 1980	11:15:54.9	46.218N	122.182W			4.10MB	1			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 9 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.50ML, MAGNITUDE AUTHORITY = GS
2113	10 MAY 1980	12:31:51.0	46.349N	122.033W			4.40MB	10			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSIST. 18 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 4.00ML, MAGNITUDE AUTHORITY = GS
2114	10 MAY 1980	17:35:20.6	46.219N	122.186W			4.00ML	3			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 13 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 4.00ML, MAGNITUDE AUTHORITY = GS

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG	SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
2115	11 MAY 1980	01:19:29.5	46.213N	122.202W			3.70ML		4			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 7 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.70ML, MAGNITUDE AUTHORITY = GS
2116	11 MAY 1980	04:00:18.1	46.220N	122.173W			4.70MB		1			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 25 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 4.50ML, MAGNITUDE AUTHORITY = GS
2117	11 MAY 1980	08:09:40.4	46.215N	122.184W			4.00MB		2			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 9 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.60ML, MAGNITUDE AUTHORITY = GS
2118	11 MAY 1980	08:15:42.1	46.194N	122.205W			4.00MB		12			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 6 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.50ML, MAGNITUDE AUTHORITY = GS
2119	11 MAY 1980	13:29:54.0	46.220N	122.176W			4.20MB		1			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 17 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 4.10ML, MAGNITUDE AUTHORITY = GS
2120	11 MAY 1980	15:00:52.2	46.213N	122.173W			3.60ML		1			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 4 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.60ML, MAGNITUDE AUTHORITY = GS
2121	11 MAY 1980	22:46:24.5	46.214N	122.190W			3.80MB		2			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 19 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 4.00ML, MAGNITUDE AUTHORITY = GS
2122	12 MAY 1980	05:24:36.2	46.211N	122.183W			3.60MB		2			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 5 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.50ML, MAGNITUDE AUTHORITY = GS
2123	12 MAY 1980	12:11:25.4	46.214N	122.191W			3.50ML		1			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 10 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.50ML, MAGNITUDE AUTHORITY = GS
2124	12 MAY 1980	16:26:29.7	46.220N	122.179W			4.80MB		2			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. MAGNITUDE= 4.4MS MS COMPUTED FROM LONG-PERIOD VERTICAL COMPONENT. 41 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 4.90ML, MAGNITUDE AUTHORITY = GS

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG	SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
2125	12 MAY 1980	16:46:50.3	46.215N	122.176W			3.70ML		2			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 5 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.70ML, MAGNITUDE AUTHORITY = GS
2126	12 MAY 1980	17:24:11.9	46.218N	122.184W			3.60ML		1			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 2 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.60ML, MAGNITUDE AUTHORITY = GS
2127	12 MAY 1980	20:33:40.7	46.251N	122.309W			4.40MB		10			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 27 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 4.60ML, MAGNITUDE AUTHORITY = GS
2128	13 MAY 1980	01:30:53.4	46.314N	121.892W			4.00ML		5			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSIST. 7 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 4.00ML, MAGNITUDE AUTHORITY = GS
2129	13 MAY 1980	08:59:55.6	46.214N	122.157W			4.00MB		1			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 10 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.60ML, MAGNITUDE AUTHORITY = GS
2130	13 MAY 1980	11:12:12.9	46.205N	122.221W			4.00MB		8			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 13 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.70ML, MAGNITUDE AUTHORITY = GS
2131	14 MAY 1980	02:18:57.8	46.224N	122.169W			4.60MB		2			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 29 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 4.50ML, MAGNITUDE AUTHORITY = GS
2132	14 MAY 1980	05:00:49.3	46.218N	122.191W			4.20MB		1			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 9 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.50ML, MAGNITUDE AUTHORITY = GS
2133	14 MAY 1980	09:43:51.8	46.218N	122.184W			4.00MB		2			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 14 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.70ML, MAGNITUDE AUTHORITY = GS
2134	14 MAY 1980	14:08:16.4	46.222N	122.172W			3.90ML		2			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 11 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.90ML, MAGNITUDE AUTHORITY = GS

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG	SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
2135	14 MAY 1980	18:48:02.2	46.207N	122.176W			3.60ML		1			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 5 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.60ML, MAGNITUDE AUTHORITY = GS
2136	15 MAY 1980	06:48:24.7	46.208N	122.185W			4.00MB		2			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 7 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.60ML, MAGNITUDE AUTHORITY = GS
2137	15 MAY 1980	09:13:00.1	46.220N	122.174W			3.80ML		1			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 5 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.80ML, MAGNITUDE AUTHORITY = GS
2138	15 MAY 1980	11:41:34.6	46.213N	122.195W			4.90MB		2			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. MAGNITUDE= 3.6MS MS COMPUTED FROM LONG-PERIOD VERTICAL COMPONENT. 16 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 4.60ML, MAGNITUDE AUTHORITY = GS
2139	15 MAY 1980	17:29:16.8	46.214N	122.168W			3.60ML		1			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 6 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.60ML, MAGNITUDE AUTHORITY = GS
2140	16 MAY 1980	03:31:04.7	46.215N	122.181W			4.40MB		1			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 11 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.70ML, MAGNITUDE AUTHORITY = GS
2141	16 MAY 1980	07:30:25.9	46.228N	122.200W			3.40ML		1		V	N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 7 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.40ML, MAGNITUDE AUTHORITY = GS
2142	16 MAY 1980	11:15:13.9	46.213N	122.174W			3.50ML		1			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 6 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.50ML, MAGNITUDE AUTHORITY = GS
2143	16 MAY 1980	12:34:54.1	46.222N	122.168W			4.60MB		2			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. MAGNITUDE= 3.7MS MS COMPUTED FROM LONG-PERIOD VERTICAL COMPONENT. 32 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 4.70ML, MAGNITUDE AUTHORITY = GS
2144	16 MAY 1980	13:27:13.5	46.211N	122.182W			4.30MB		3			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM.

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG	SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
													15 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.90ML, MAGNITUDE AUTHORITY = GS
2145	16 MAY 1980	14:22:00.3	46.216N	122.175W			4.20MB		2			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 11 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 4.00ML, MAGNITUDE AUTHORITY = GS
2146	16 MAY 1980	16:17:44.5	46.208N	122.192W			3.90MB		2			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 8 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.80ML, MAGNITUDE AUTHORITY = GS
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2150	17 MAY 1980	19:27:53.4	46.201N	122.168W			3.80MB		5			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. 7 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.60ML, MAGNITUDE AUTHORITY = GS
2151	17 MAY 1980	21:42:07.4	46.213N	122.170W			4.20MB		4			N	ORIGINAL DATA SOURCE = GS EARTHQUAKE ASSOCIATED WITH VOLCANISM. MAGNITUDE= 3.7MS MS COMPUTED FROM LONG-PERIOD VERTICAL COMPONENT. 16 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.90ML, MAGNITUDE AUTHORITY = GS
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CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
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CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
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2164	23 JUN 1980	16:05:15.9	47.517N	122.233W		V	3.10ML	3			N	ORIGINAL DATA SOURCE = GS REPORTED FELT INFORMATION. 4 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.10ML, MAGNITUDE AUTHORITY = GS
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2166	7 JUL 1980	01:17:06.0	45.219N	121.686W		IV	3.30ML	5			N	ORIGINAL DATA SOURCE = GS REPORTED FELT INFORMATION. HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSIST. 6 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. 3.30ML, MAGNITUDE AUTHORITY = GS
2167	15 JUL 1980	14:29:19.9	43.480N	127.063W			4.50MB	15			N	ORIGINAL DATA SOURCE = GS HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSIST. 9 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION.
2168	3 AUG 1980	08:24:02.0	42.399N	125.708W			4.50MB	15			N	ORIGINAL DATA SOURCE = GS MAGNITUDE= 3.2MS MS COMPUTED FROM LONG-PERIOD VERTICAL COMPONENT. HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSIST. 33 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION.
2169	3 AUG 1980	09:04:23.4	42.348N	126.197W			4.50MB	15			N	ORIGINAL DATA SOURCE = GS HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSIST. 11 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION.
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2171	4 AUG 1980	09:40:44.7	42.346N	126.937W			4.40MB	15			N	ORIGINAL DATA SOURCE = GS HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSIST. 8 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION.
2172	9 AUG 1980	05:31:53.3	43.796N	127.781W			4.60MB	15			N	ORIGINAL DATA SOURCE = GS HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSIST. 26 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION.
2173	19 SEP 1980	22:53:14.5	47.969N	121.886W		V	3.80ML	5			N	ORIGINAL DATA SOURCE = GS REPORTED FELT INFORMATION. HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSIST. 13 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. MAGNITUDE AUTHORITY = GS

CAT. NO.	DATE DAY-MO-YEAR	TIME(GMT) HR-MIN-SEC	LAT	LONG	SL	INTEN (MM)	MAG	SM	H (KM)	DIS (KM)	Q	S	LOCATION AND COMMENTS
2174	21 SEP 1980	17:45:18.7	47.918N	121.813W			3.40ML		5			N	ORIGINAL DATA SOURCE = GS REPORTED FELT INFORMATION. HYPOCENTER SOLUTION DEPTH RESTRAINED BY GEOPHYSIST. 9 P AND/OR P' ARRIVALS USED IN HYPOCENTER SOLUTION. MAGNITUDE AUTHORITY = GS
2175	19 NOV 1980	21:35:23.8	46.951N	119.476W			3.30MC					UW	DEPTH CONSTRAINED. THIS IS A UW PRELIMINARY LOCATION.
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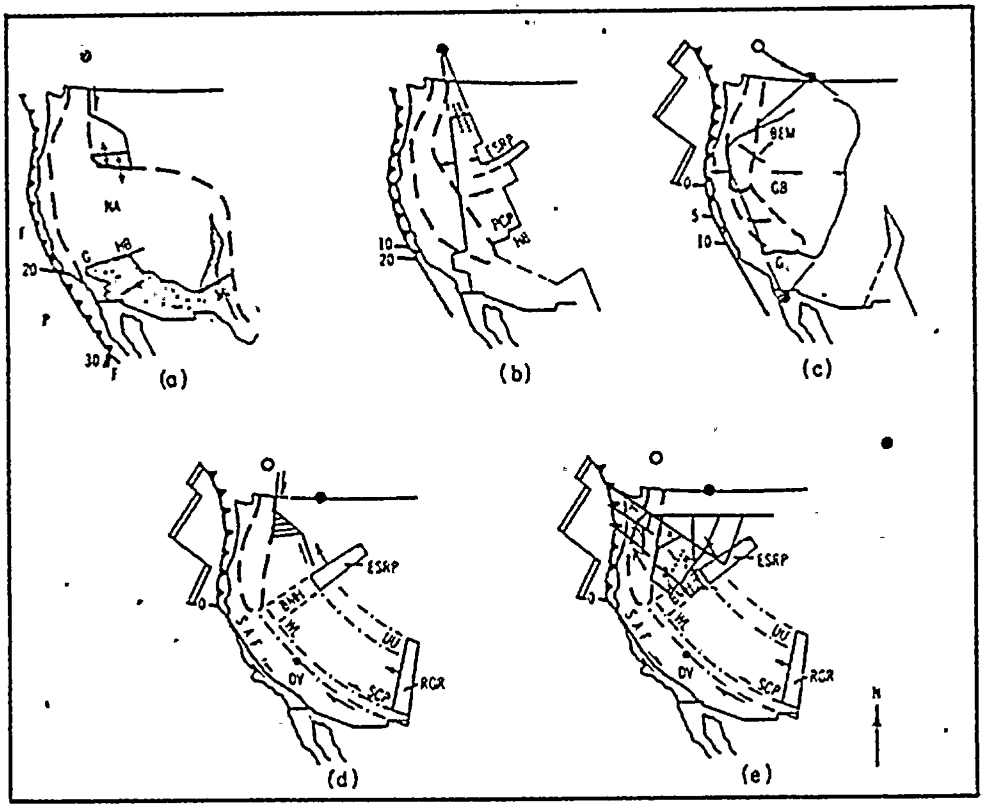
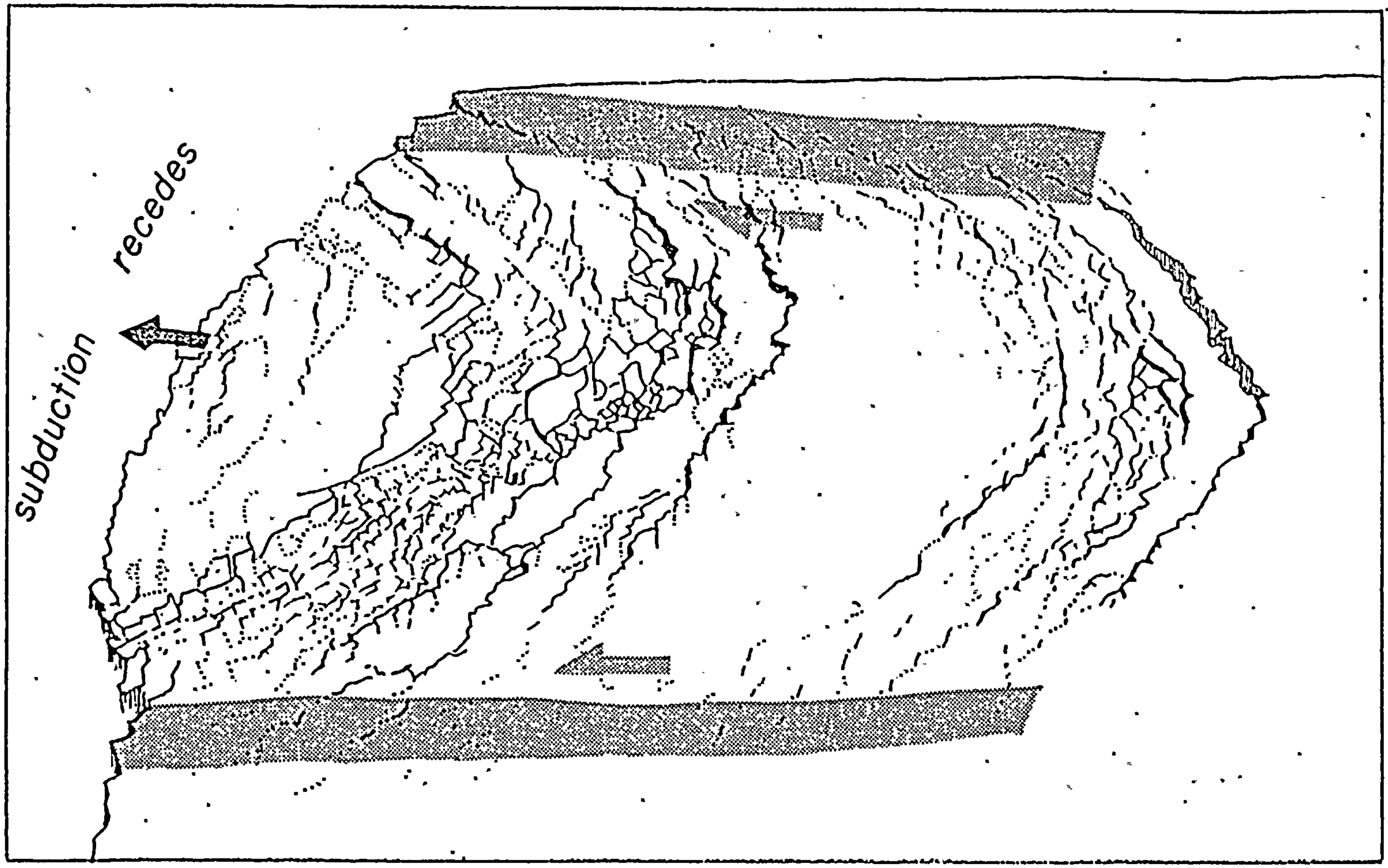


The Cenozoic kinematics of the Pacific NW, from Eaton (1979).
Elements of Columbia Plateau deformation added.

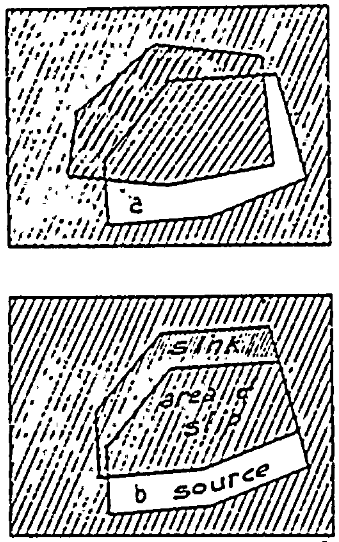
Figure 1



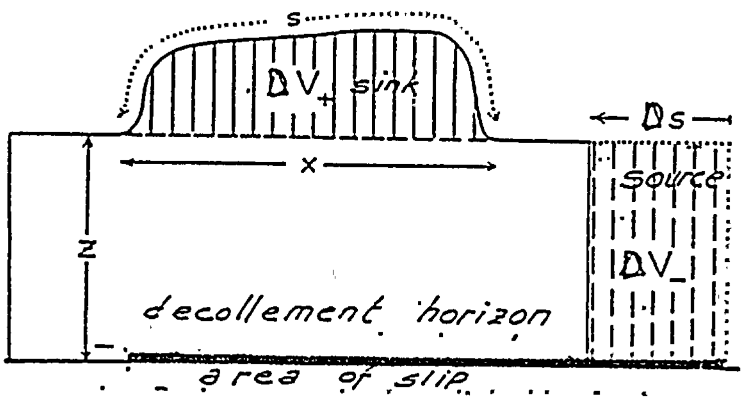
Experimental extensional block mosaic, after McGill and Stromquist (1979). Compare Fig. 9.

Figure 2

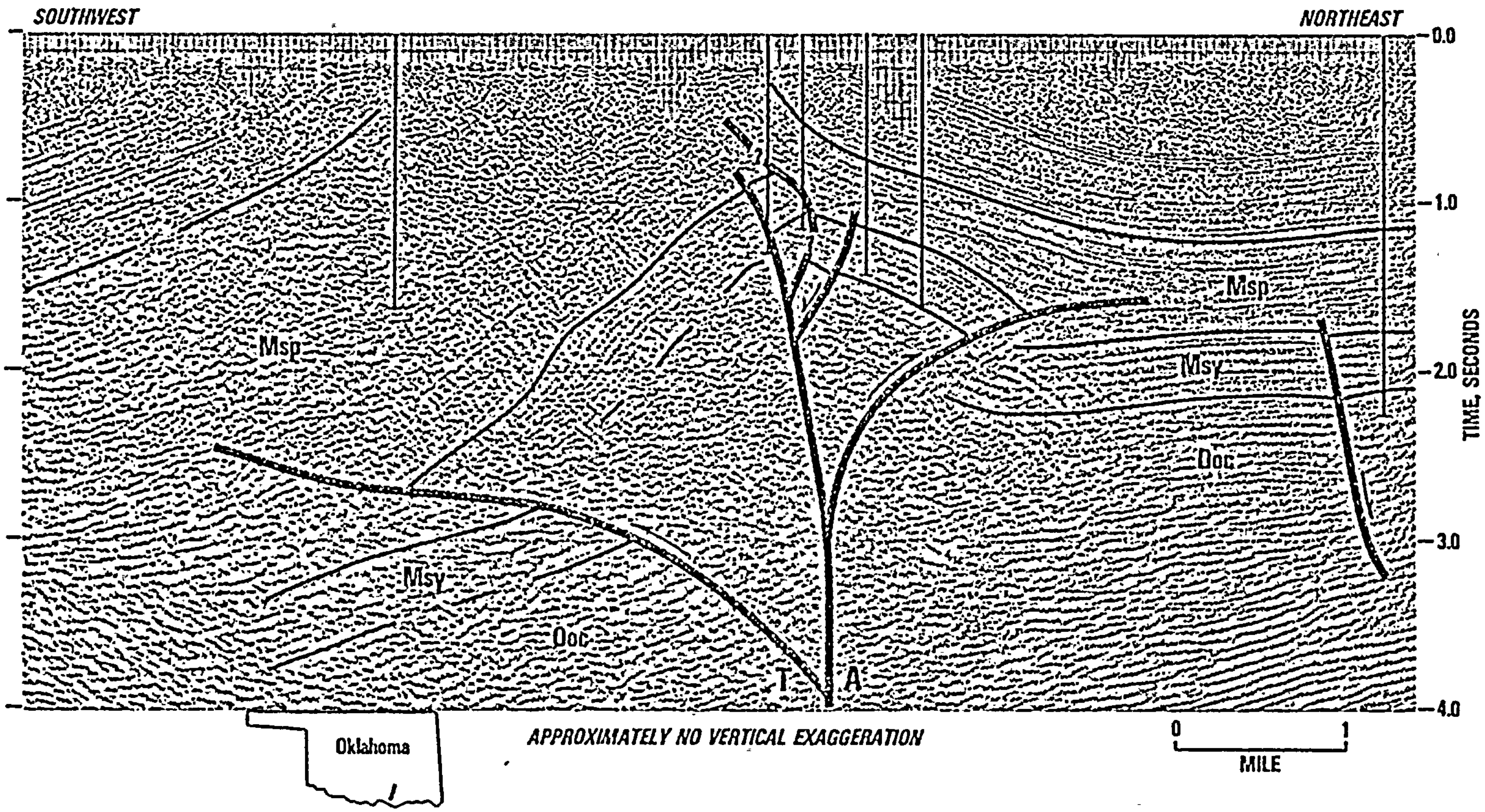
Figure 2 - solid - same size as shot BCK



Elements of rigid block motion, from Laubscher (1965), map view.
Figure 3



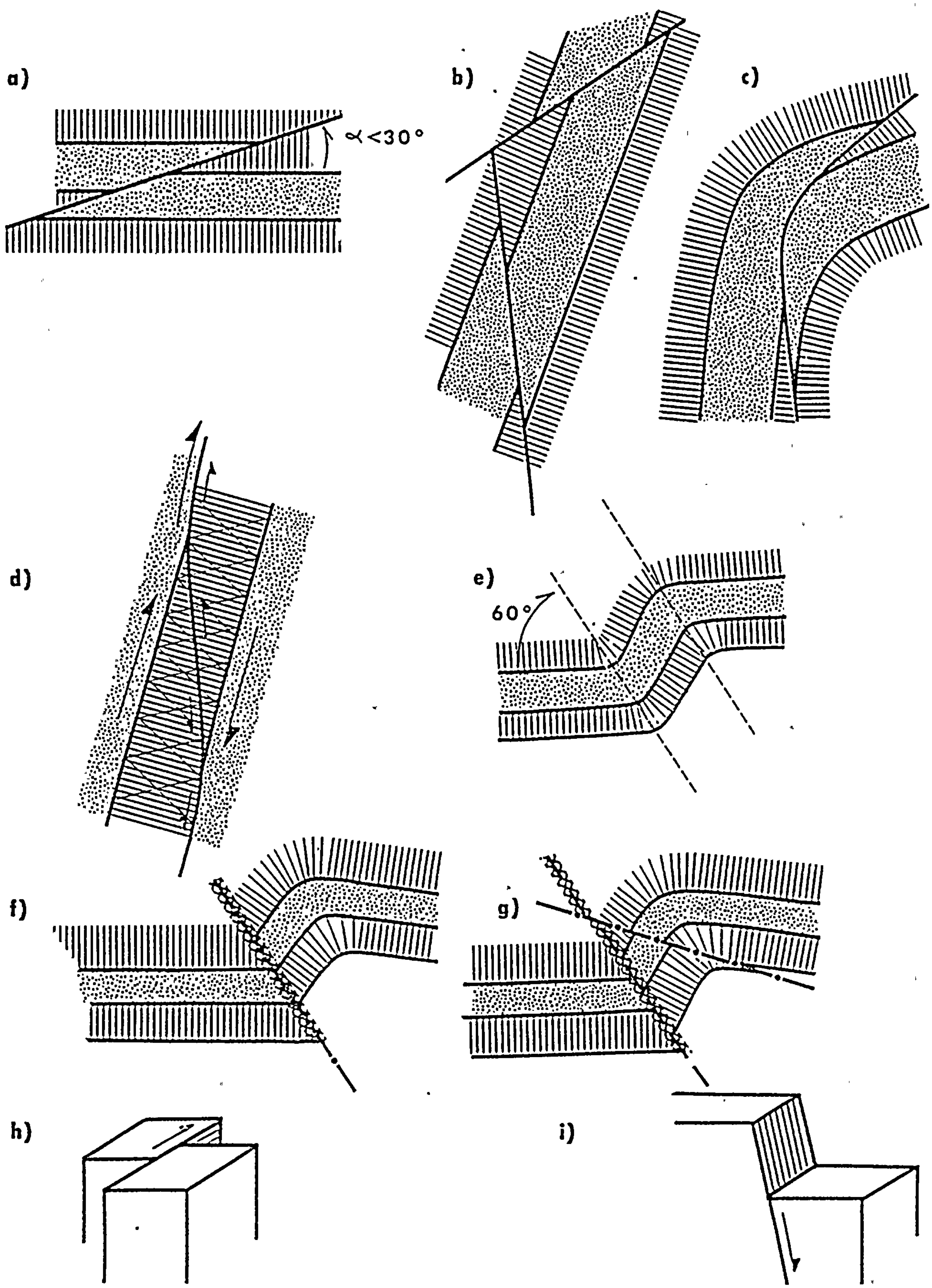
Elements of decollement kinematics, cross-section, from Laubscher (1965).
Figure 4



-Migrated seismic profile across wrench-fault zone in Ardmore basin of Oklahoma demonstrating flower-structure geometry (adapted from unmigrated interpretation by R. F. Gregory and E. C. Lookabaugh, 1973). *Msp*, Mississippian Springer, *Msy*, Mississippian Sycamore, and *Ooc*, Ordovician Oil Creek reflectors. *T*, displacement toward viewer, *A* away from viewer.

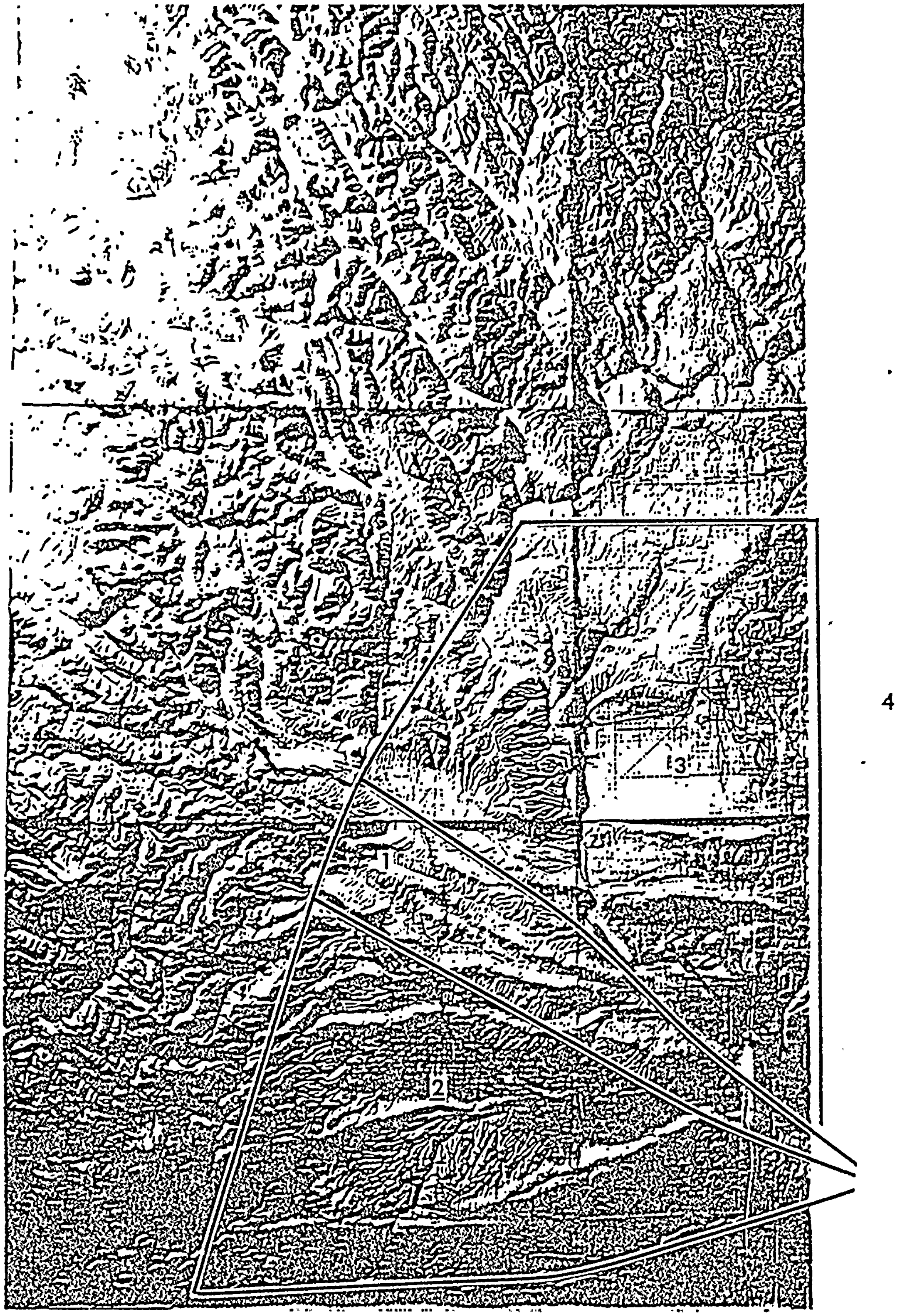
·"Flower-structure" in a wrench fault zone, from Harding and Lowell (1979).

Figure 5



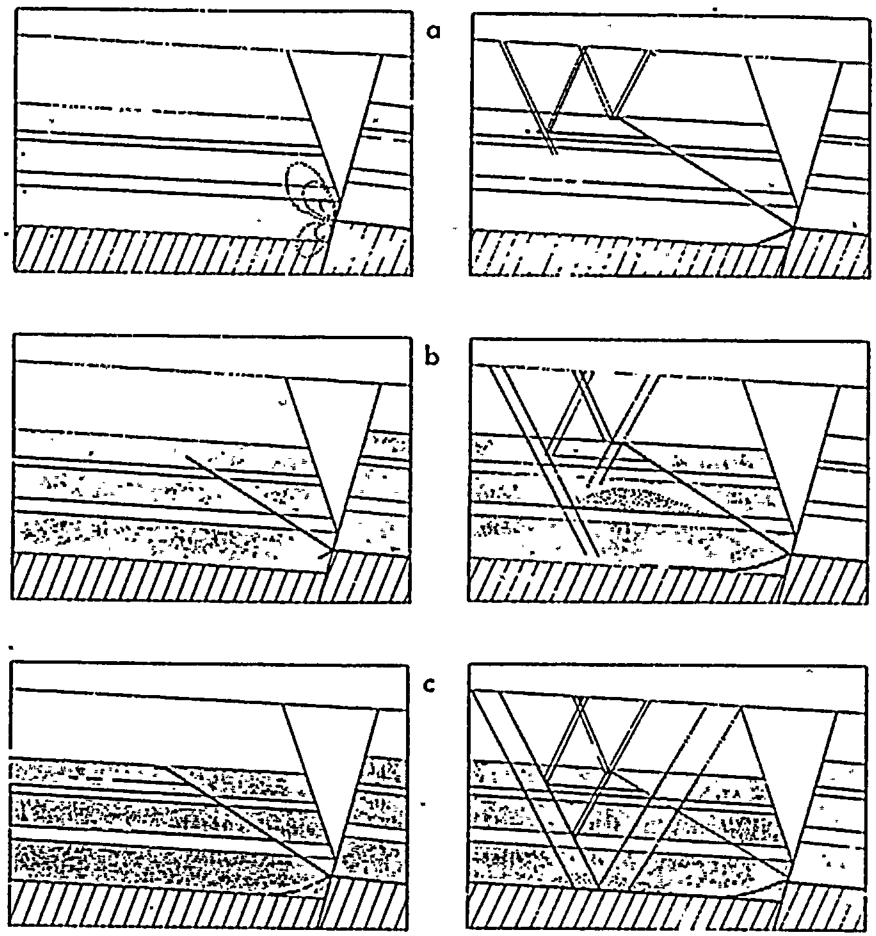
Small-scale structure in the Columbia Plateau Folds.
Dotted: interflow layers.

Figure 6

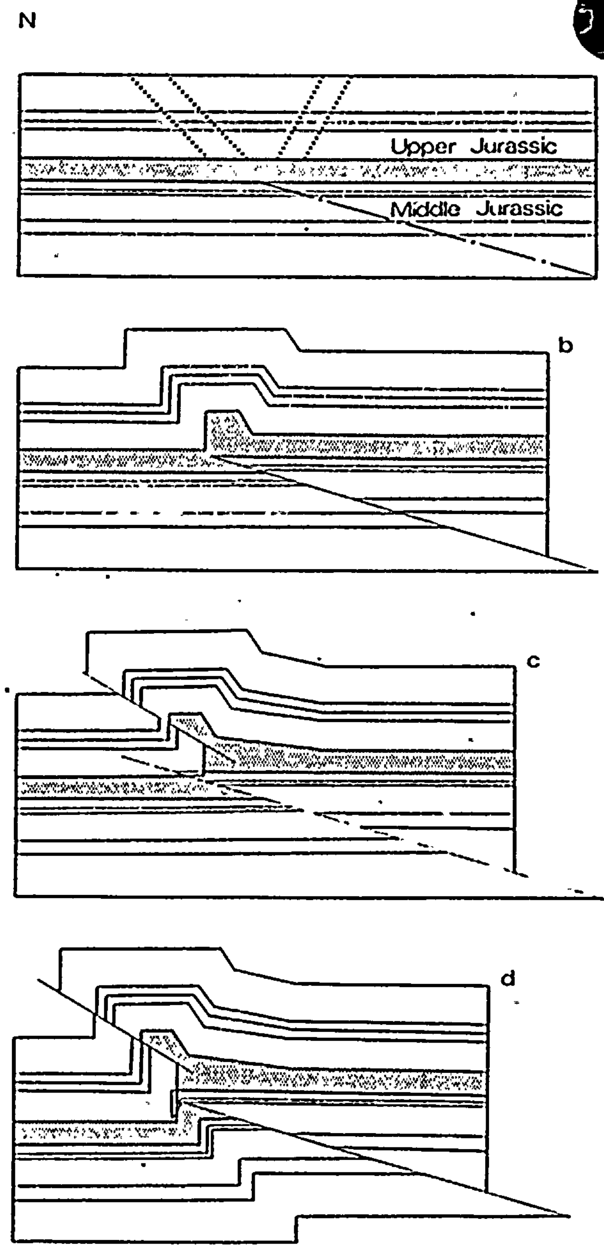


Plastic relief map of the western Columbia Plateau and the adjacent highlands.

Figure 7



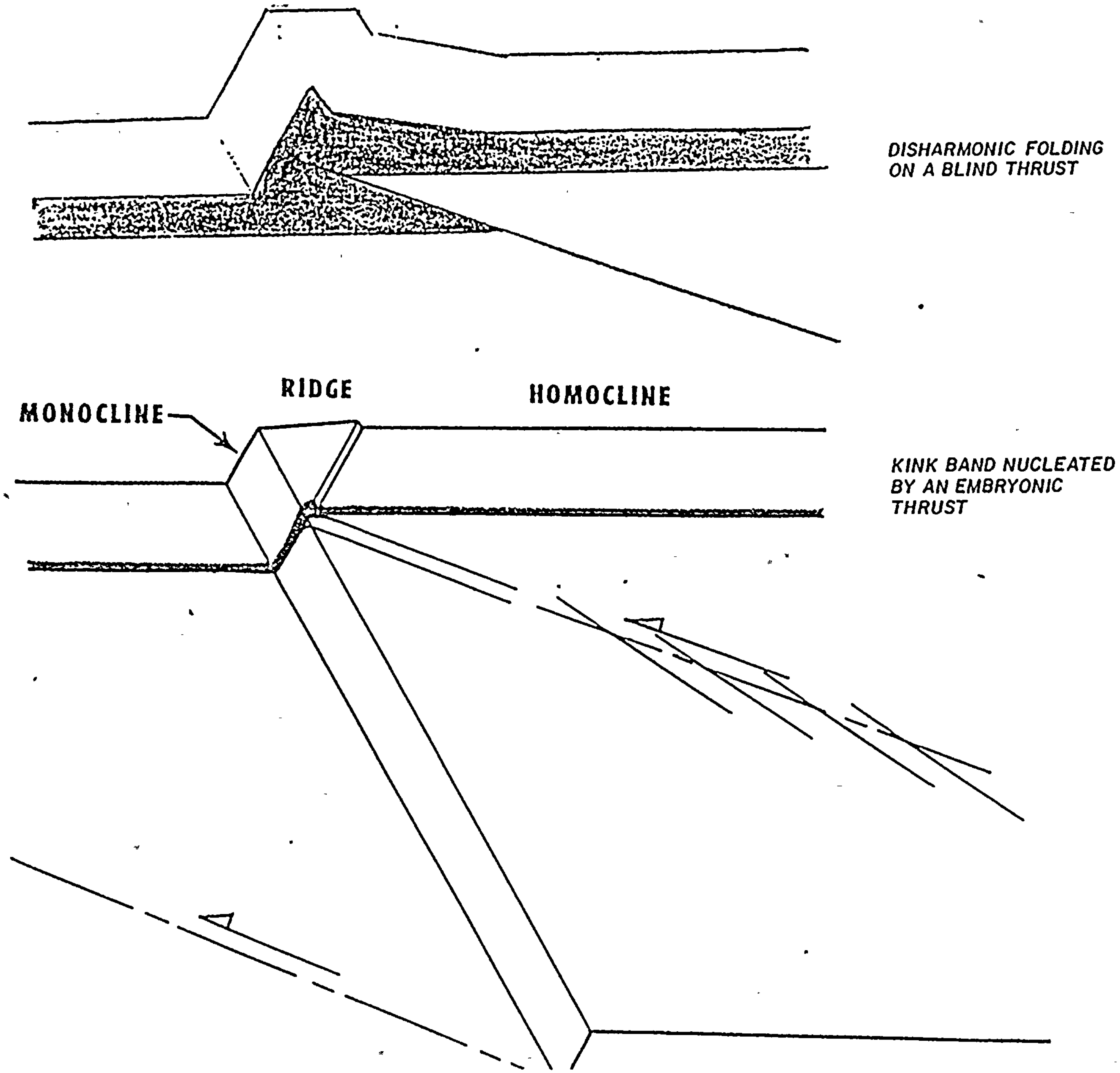
Stages in the spreading of static instabilities, Sprüsel structure. Heavy lines: décollement and thrusting. Double lines: kink bands. The main incompetent intervals are shaded.



Stages in the development of the Goumois-S anticline.

Decollement, ramps, blind trusts and kink folds in the Jura, from Laubscher (1977).

Figure 8



Possible interpretations of the deep structure of Yakima folds.
Figure 8a

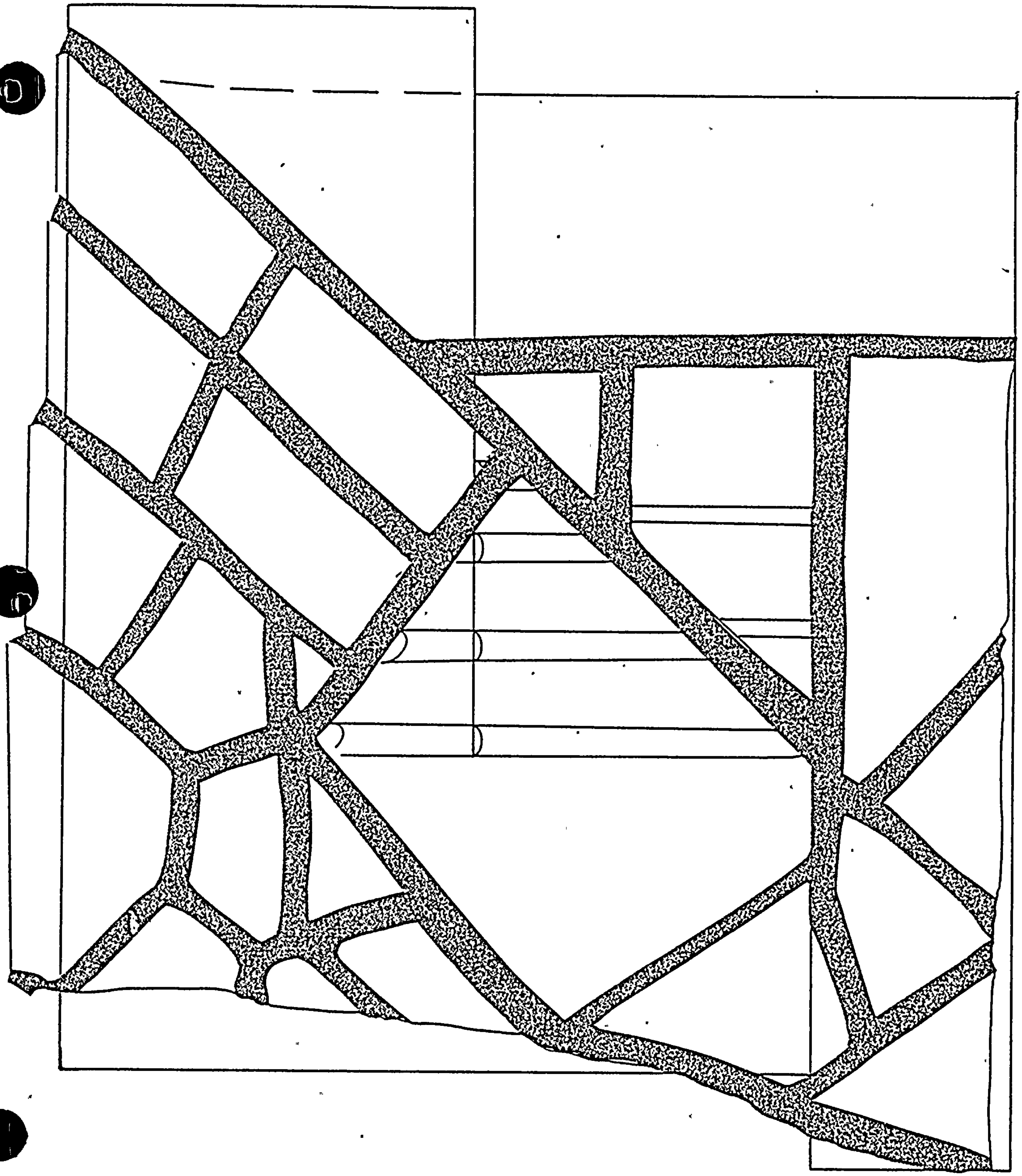
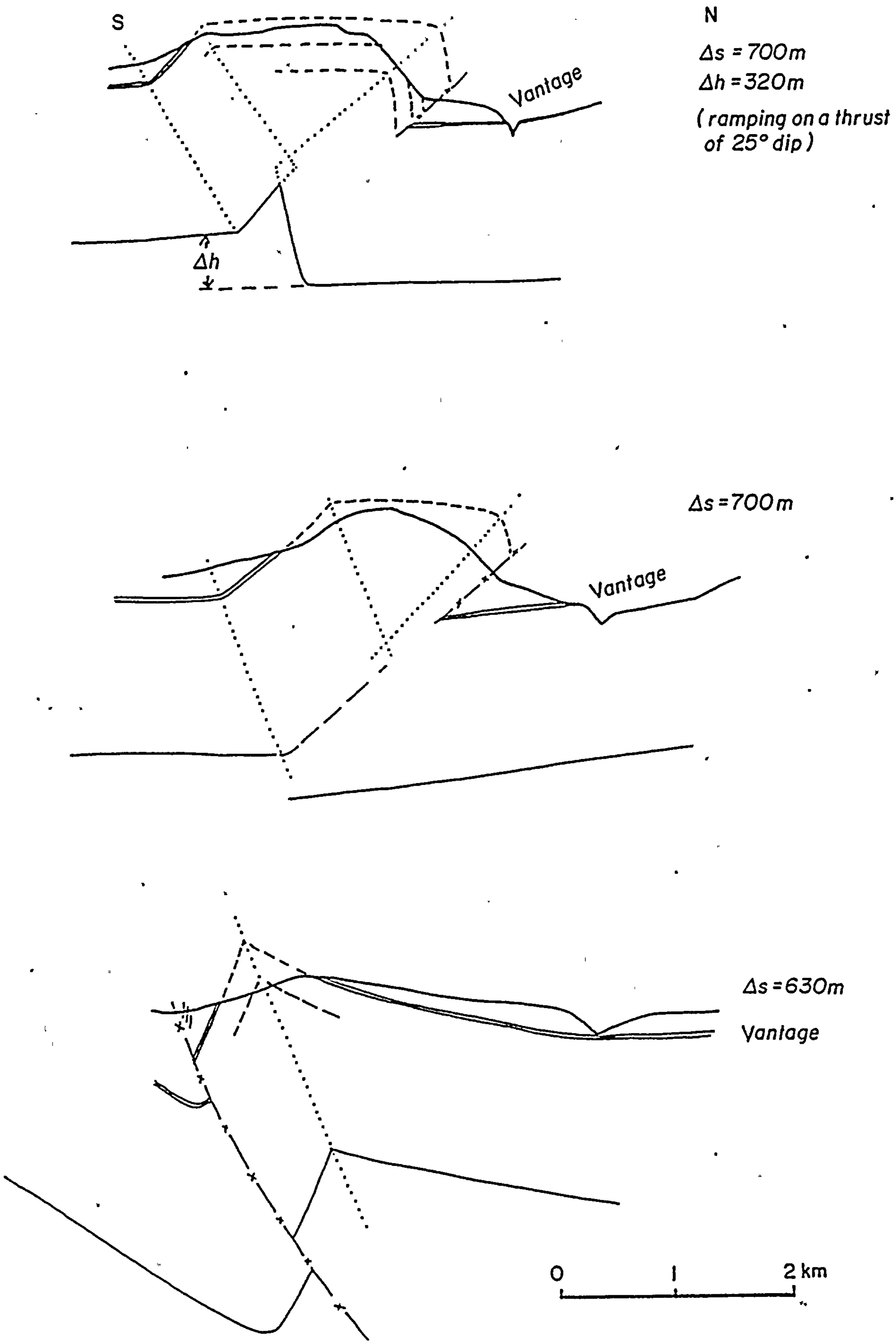


Fig 9
50% screen

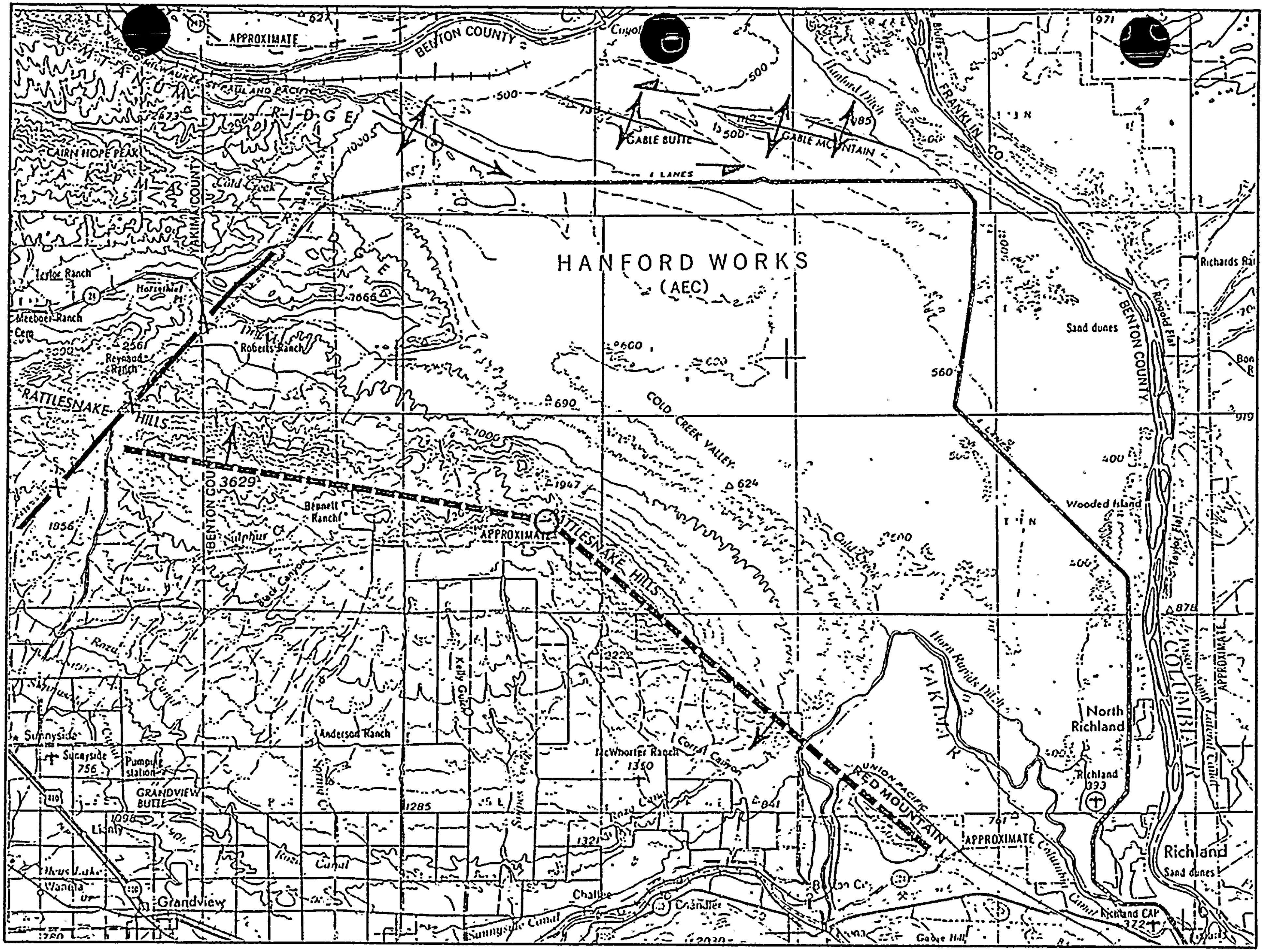
Kinematics of the Columbia Plateau and its surroundings, tentative concepts; compare Figs. 1(e), 2, 14.

Figure 9

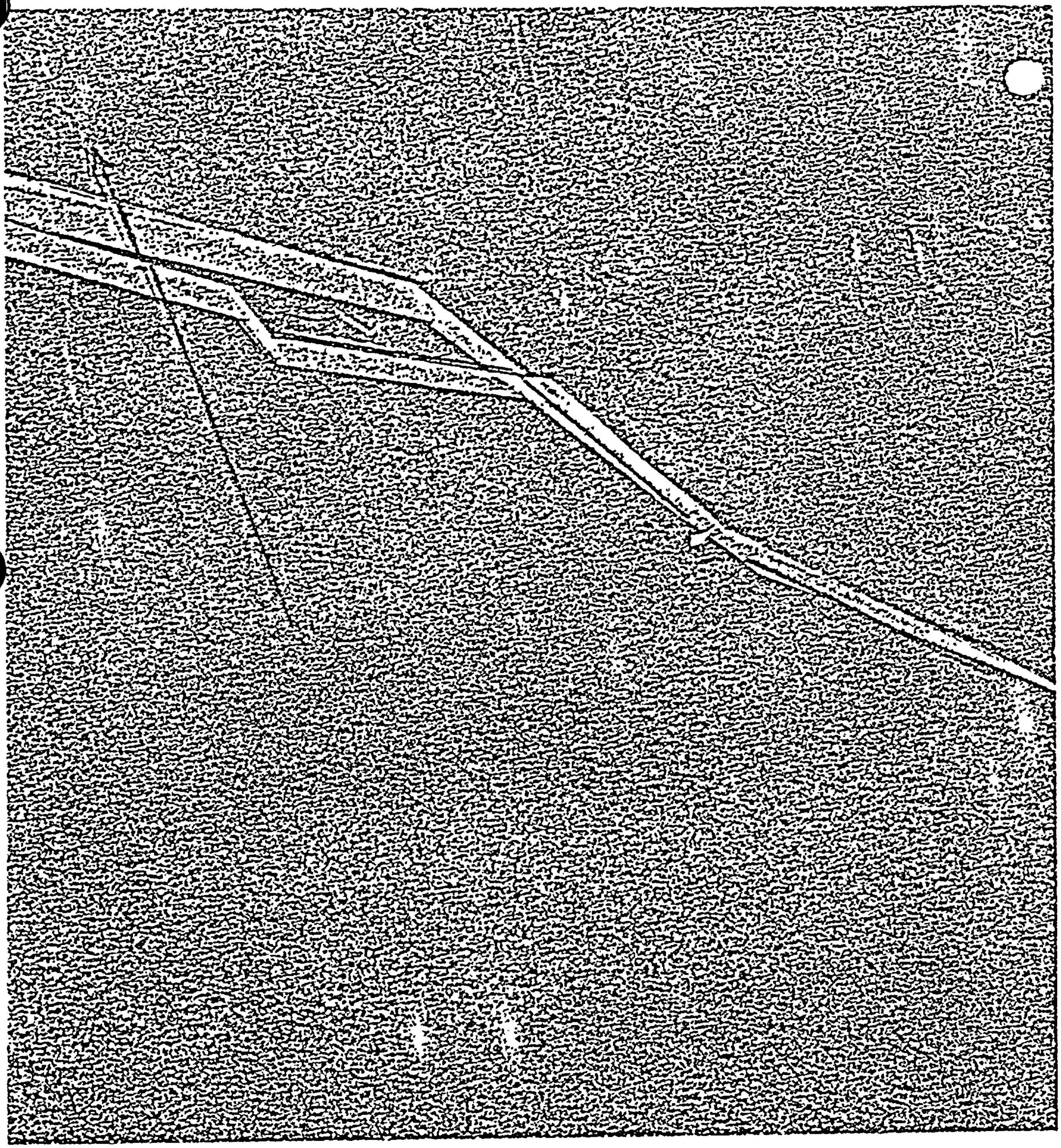


Estimates of compression in Umtanum Ridge, after Bentley (1977). Adjusted from the original which is vertically exaggerated.

Figure 10

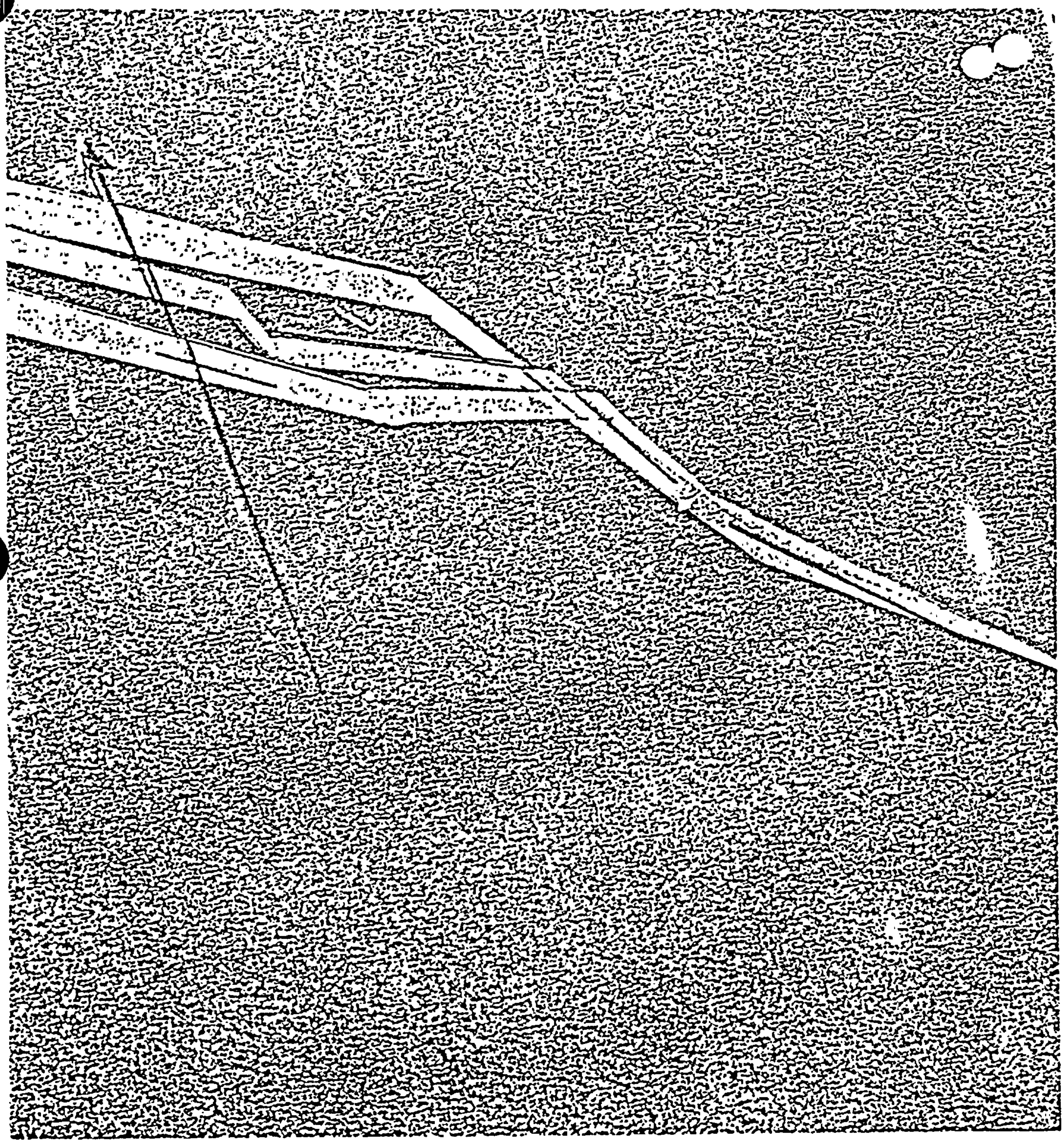


Axial plunge of Rattlesnake Hills.
Figure 11

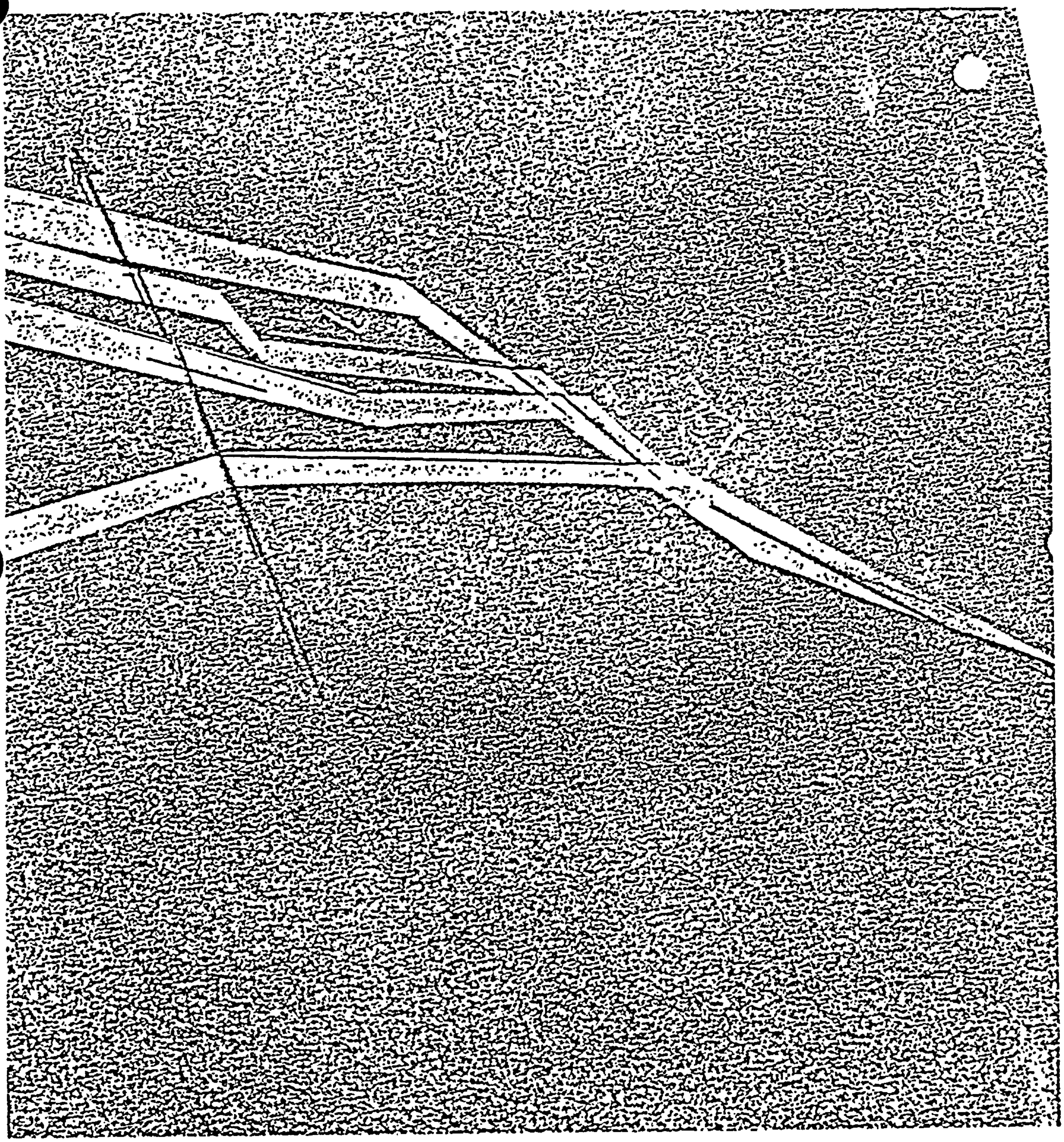


A cut-paper kinematic model of rigid-body Yakima tectonics.

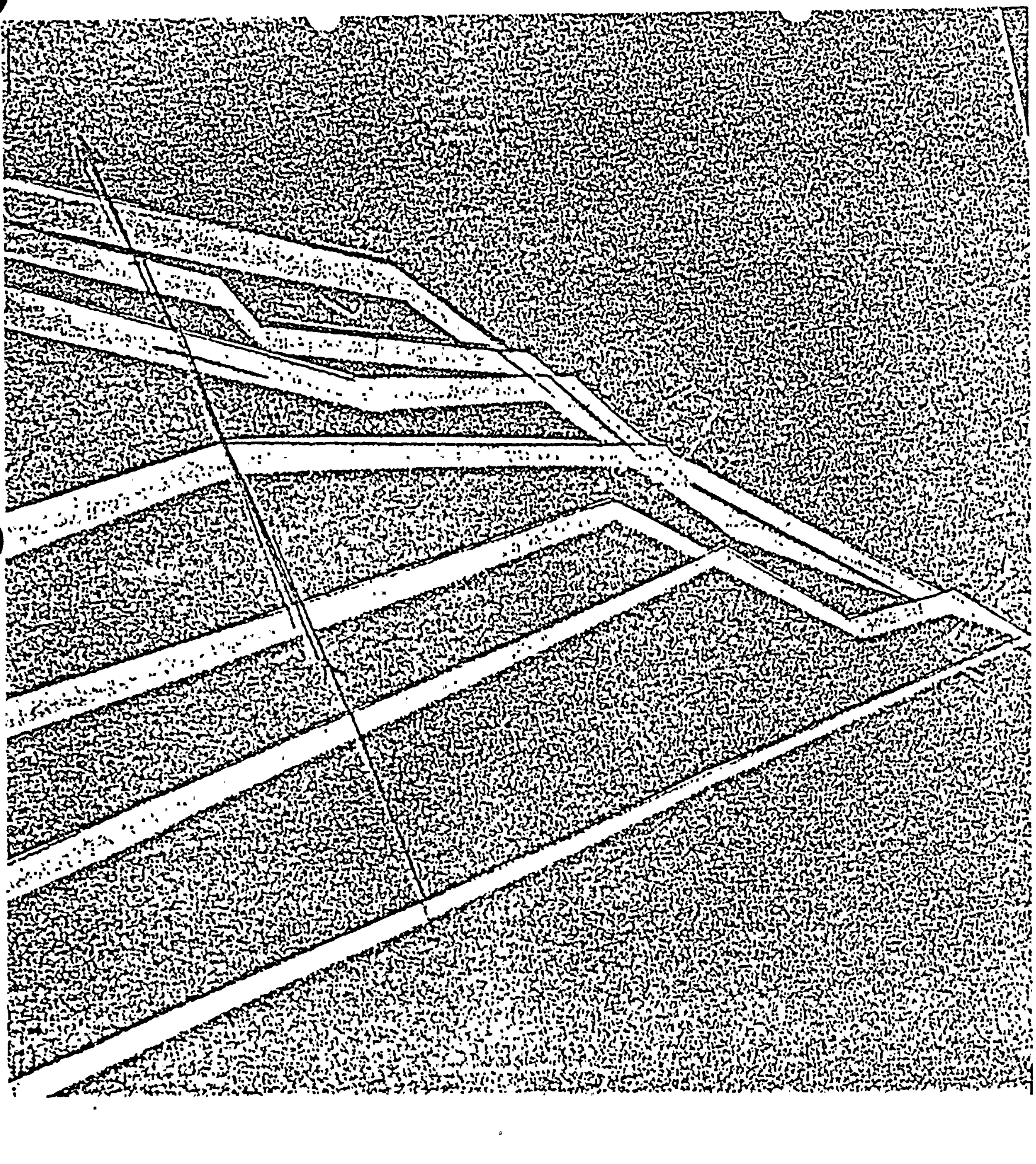
Figure 12a



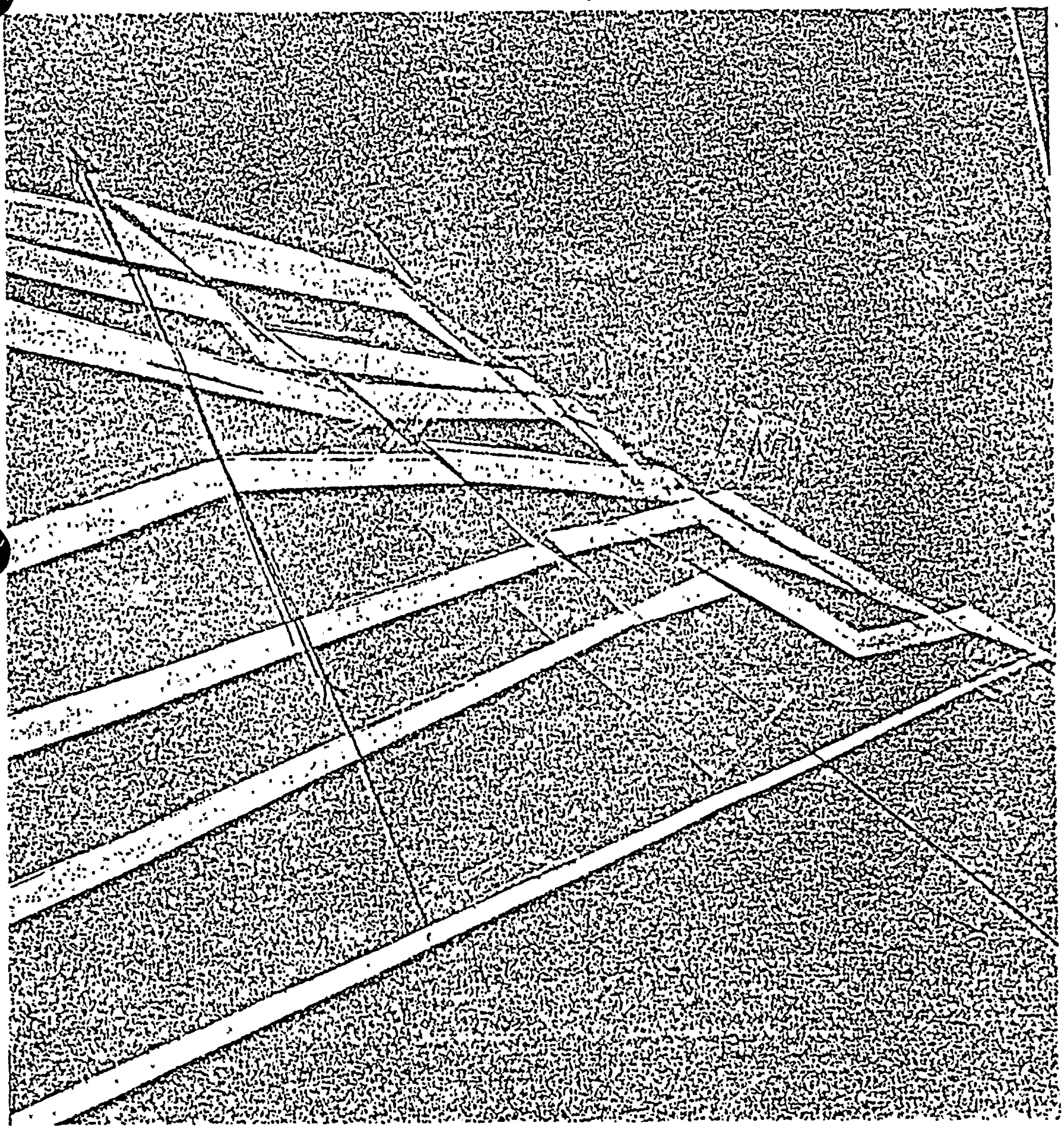
A cut-paper kinematic model of rigid-body Yakima tectonics.
Figure 12b



A cut-paper kinematic model of rigid-body Yakima tectonics.
Figure 12c

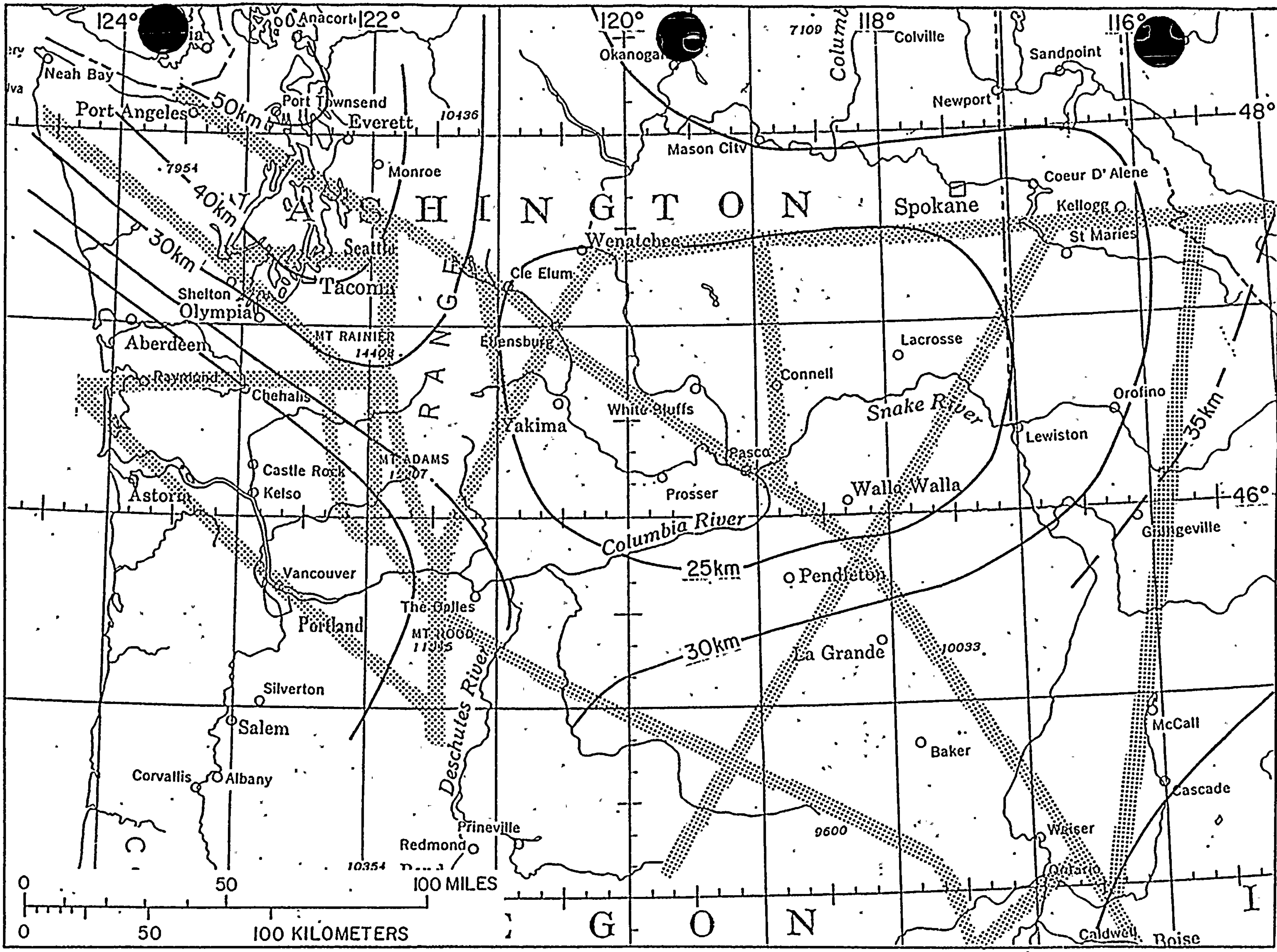


A cut-paper kinematic model of rigid-body Yakima tectonics.
Figure 12d



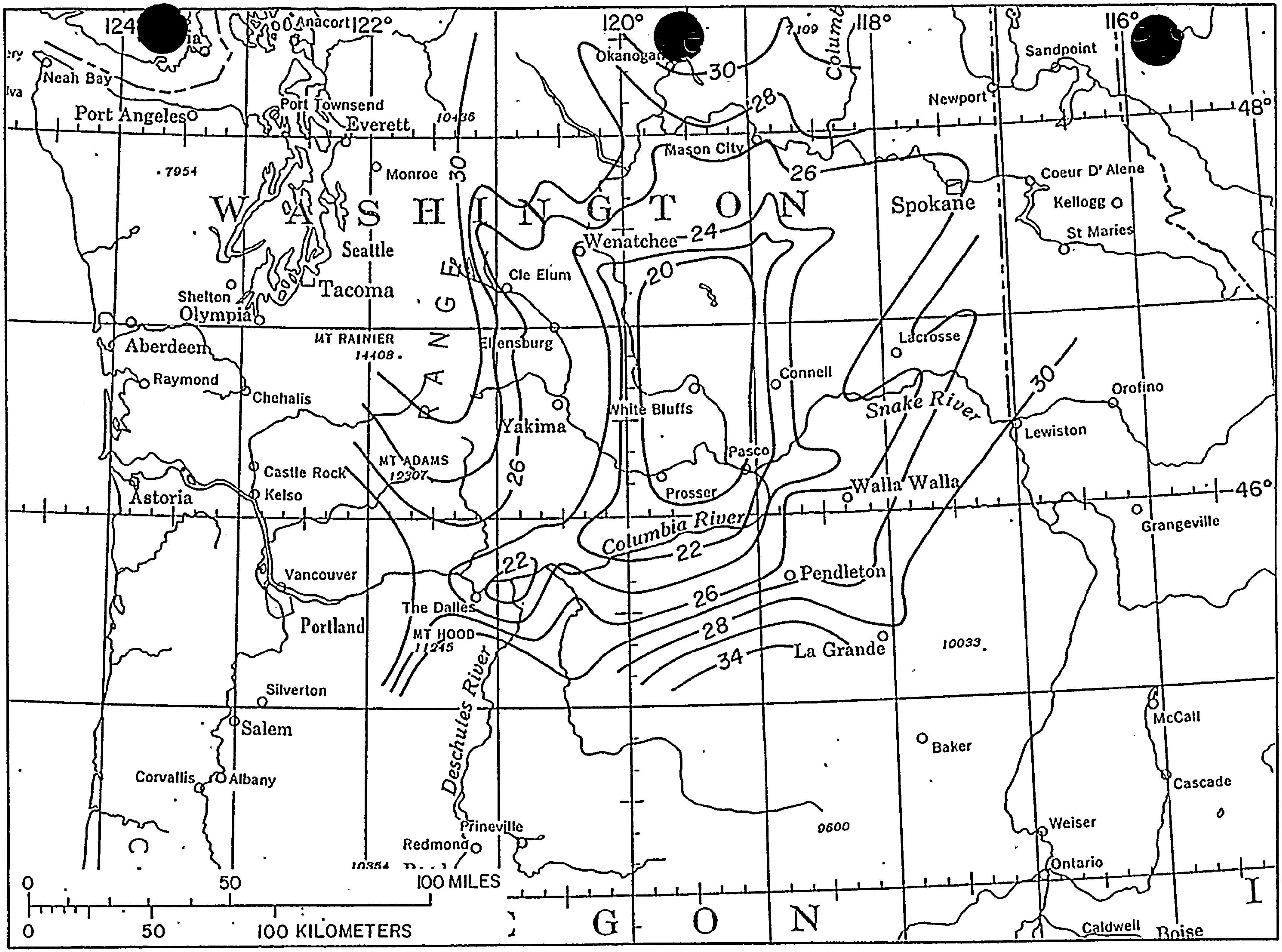
A cut-paper kinematic model of rigid-body Yakima tectonic..

Figure 12e



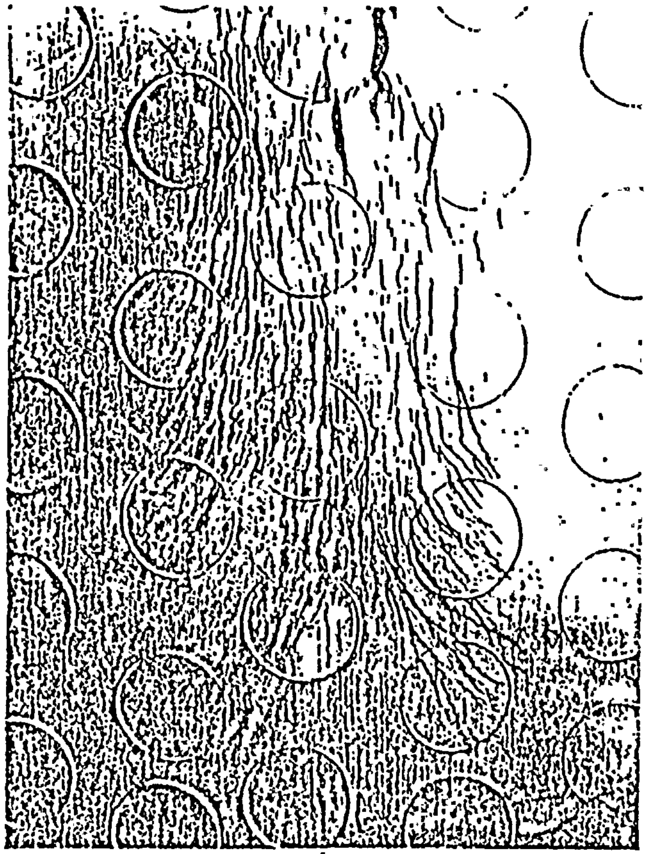
The IDOL block belt and regional crustal isopachs (after Smith 1978). Compare Fig. 17.

Figure 13

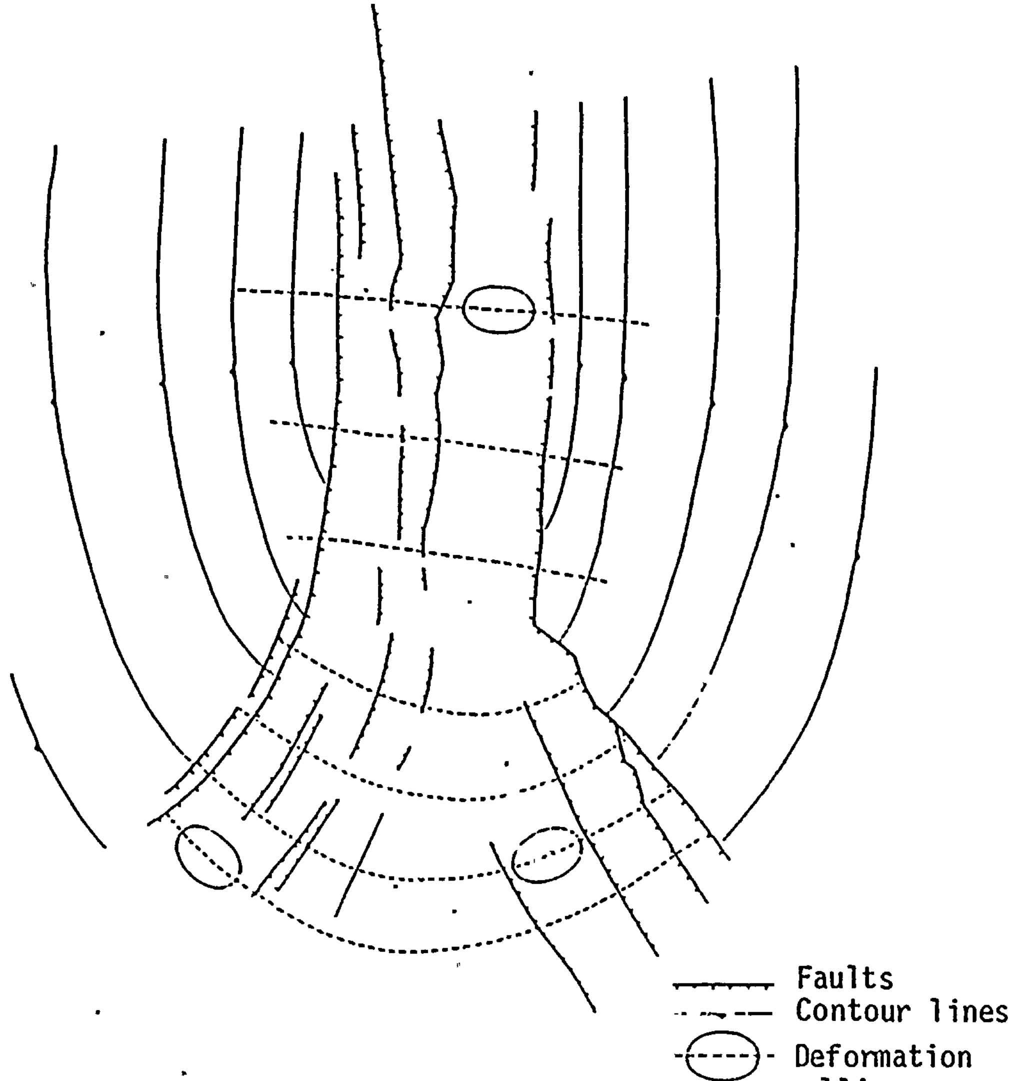


Crustal isopachs of the Columbia Plateau, estimated from seismic and gravity data.

Figure 17



Clay experiment of ellipsoidal domal uplift. Originally circular imprints are slightly deformed into ellipses.



Explanatory sketch illustrating the experiment.

Domes and grabens, after Cloos (1939).
Figure 19

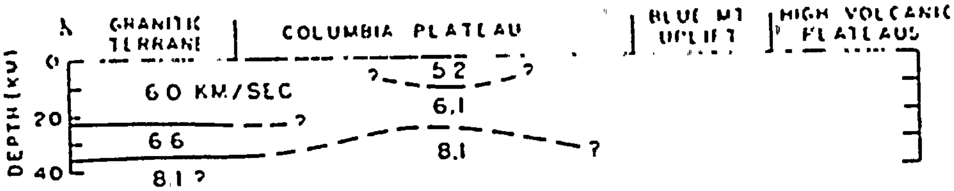
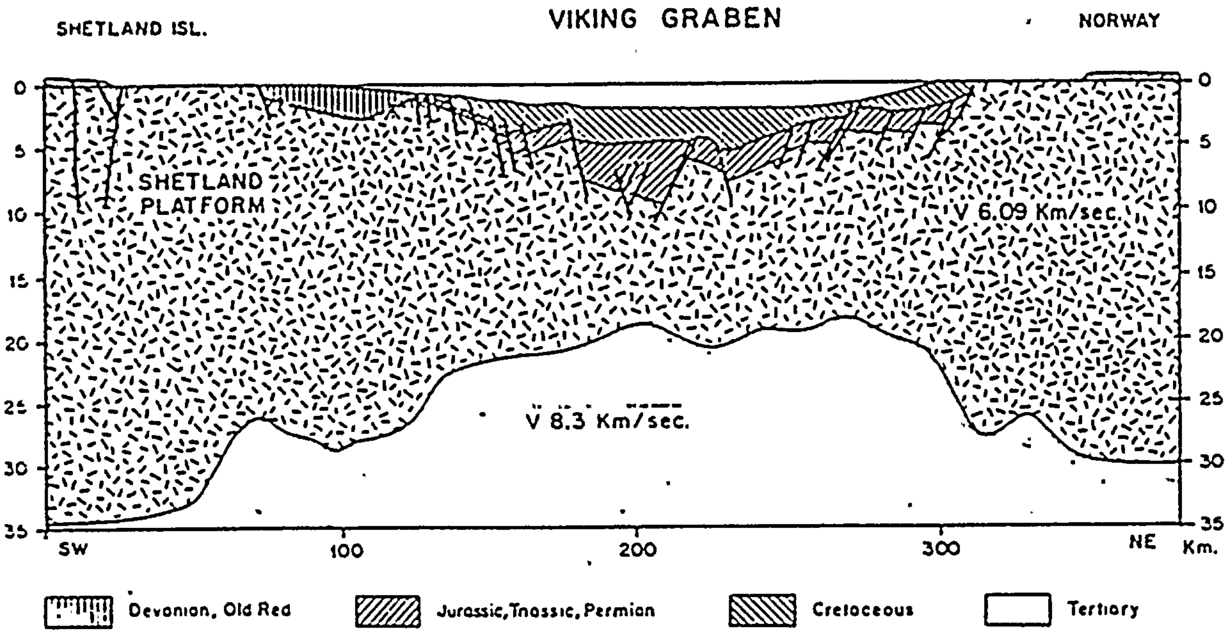


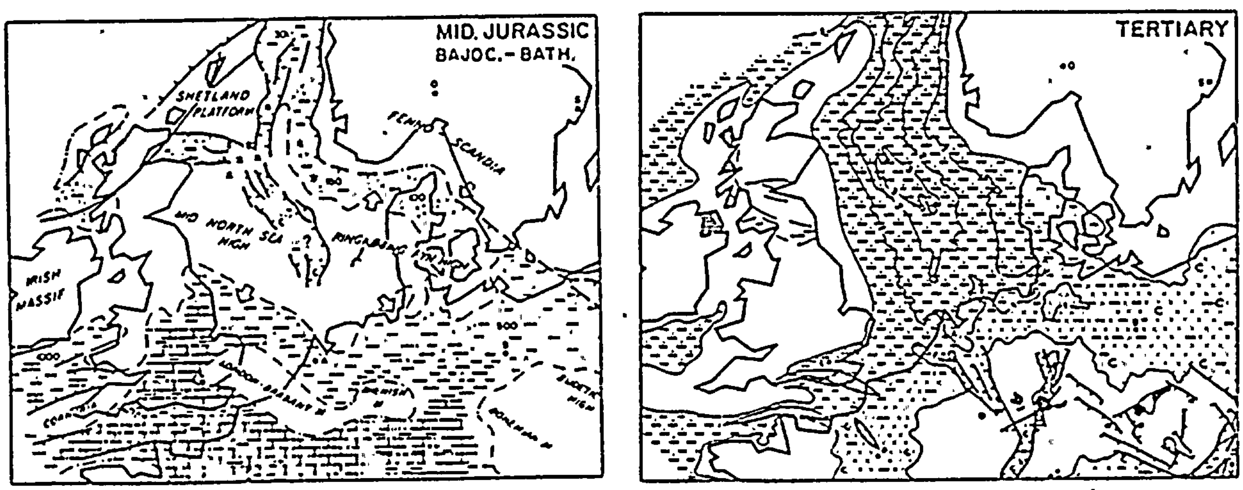
Figure 7-7. Crustal structual of the Columbia Plateau along north-south profile from the Canadian border into east Oregon (see Fig. 7-2). Structure within the Columbia Plateau is constrained by Eaton's analysis of quarry blasts recorded on the Pasco Basin seismograph network (J. P. Eaton, 1976, oral commun.). Upper plot is reduced traveltime curve of first arrivals (P_n) on which variations in structure between granitic terrane of northern Washington and Columbia Plateau is based (Hill, 1972). Symbols O and H indicate the two types of instrumentation used to record the data (see Hill, 1972). From Hill (1978)



REFRACTION AND REFLECTION PROFILE ACROSS VIKING GRABEN
MODIFIED AFTER SOLLI 1976

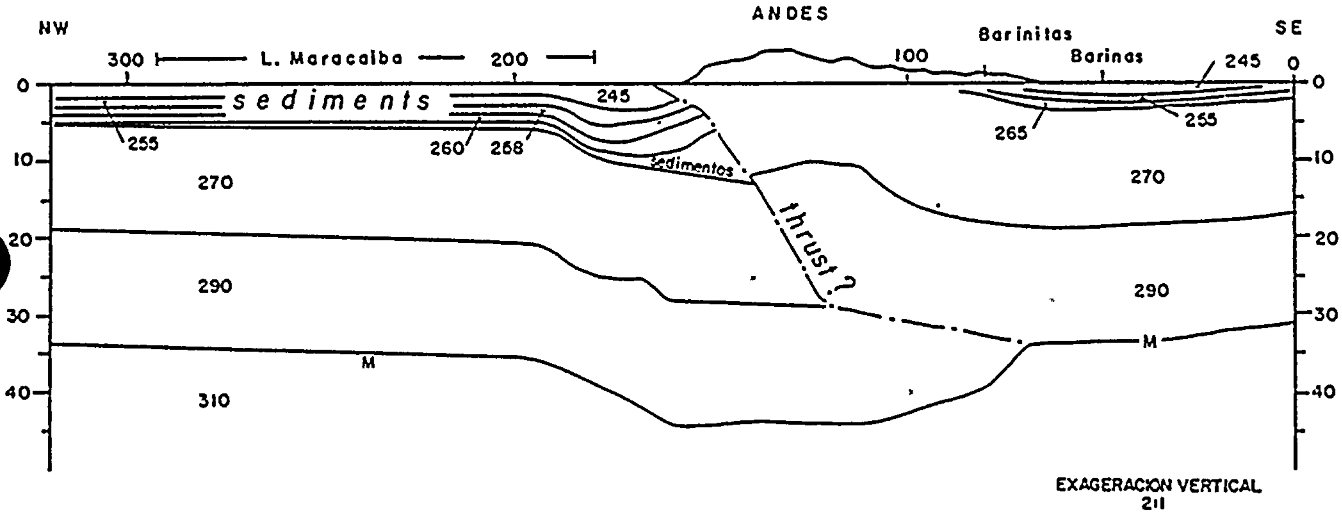
Fig 7 Refraction-Reflection section northern North Sea

From Ziegler (1977)



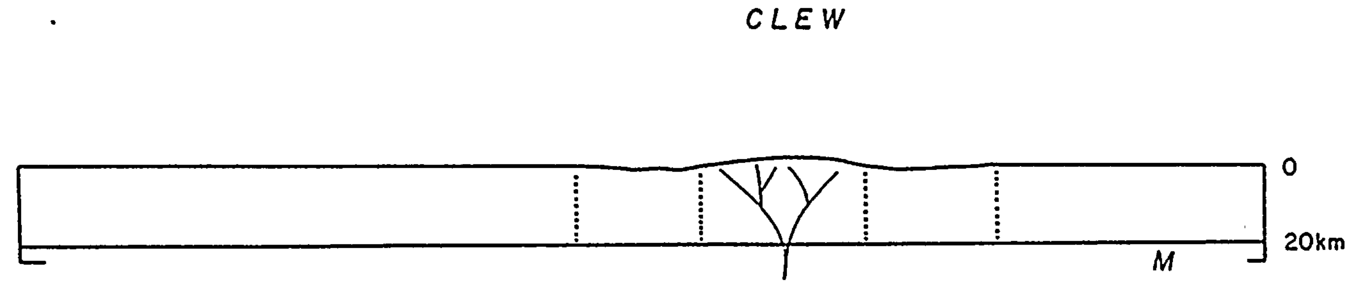
Crustal thinning in graben areas (after Hill 1978, Ziegler 1977) and early doming followed by later subsidence (Ziegler 1977).

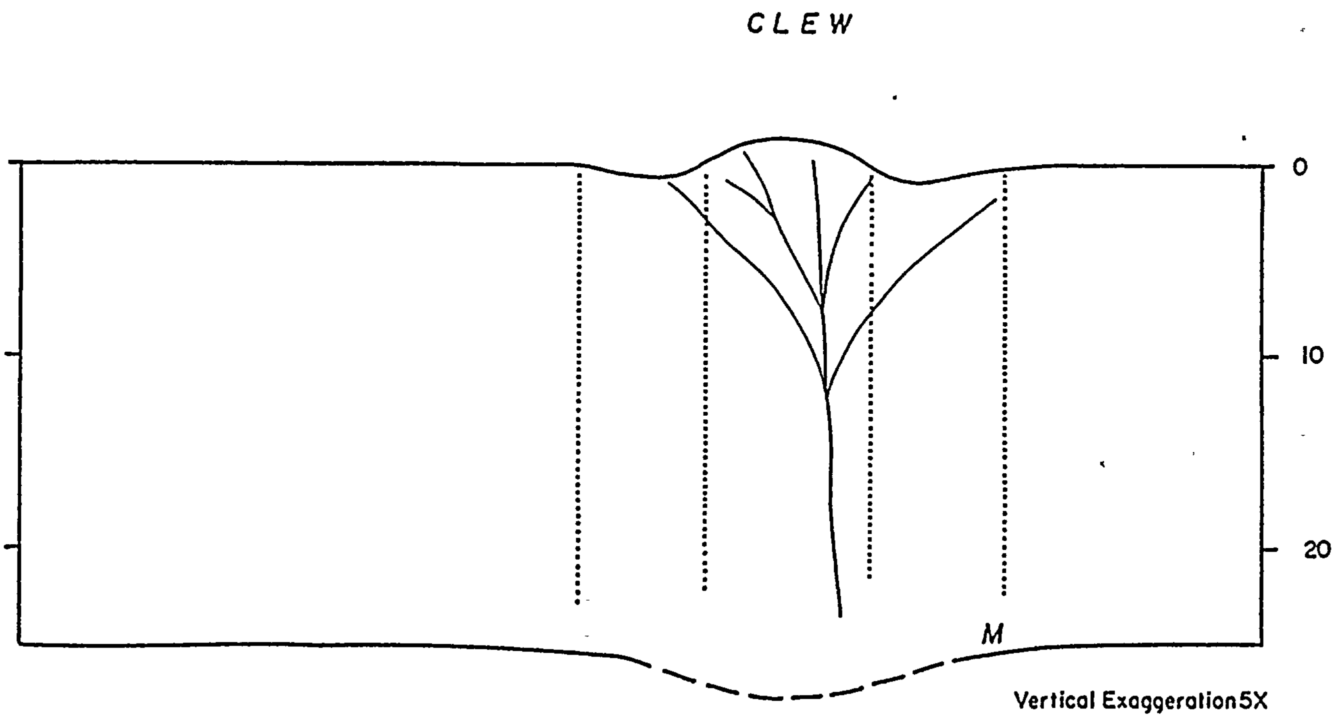
Figure 20



A deep crustal section through the Venezuelan Andes, after Wittke (1977).

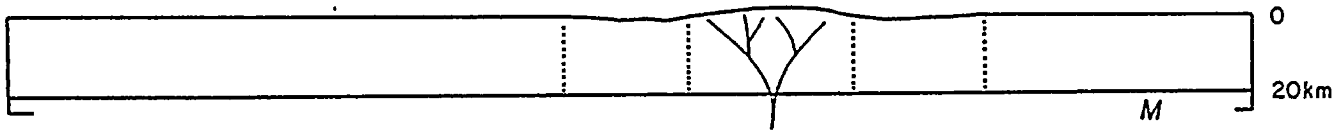
Figure 21



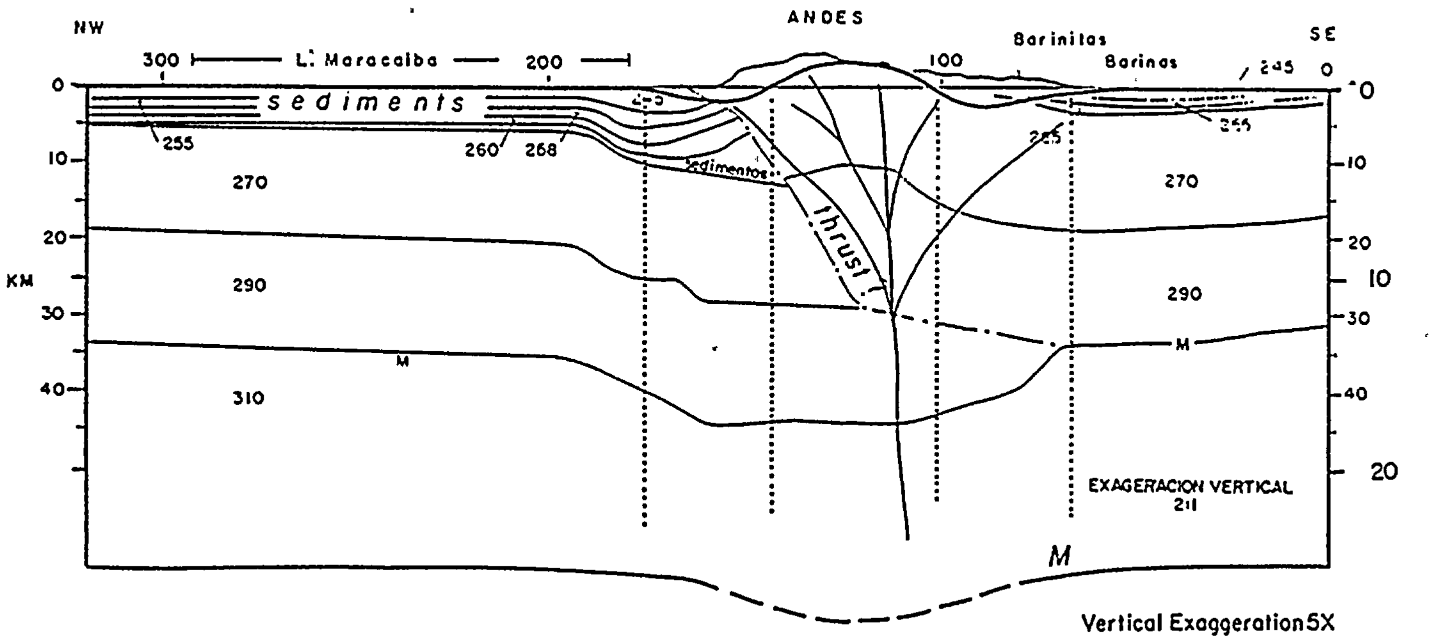


Clew, simplified as a small-amplitude crustal fold.
Figure 22

CLEW



CLEW



Vertical Exaggeration 5X

A superposition of Figures 21 and 22.
Figure 23

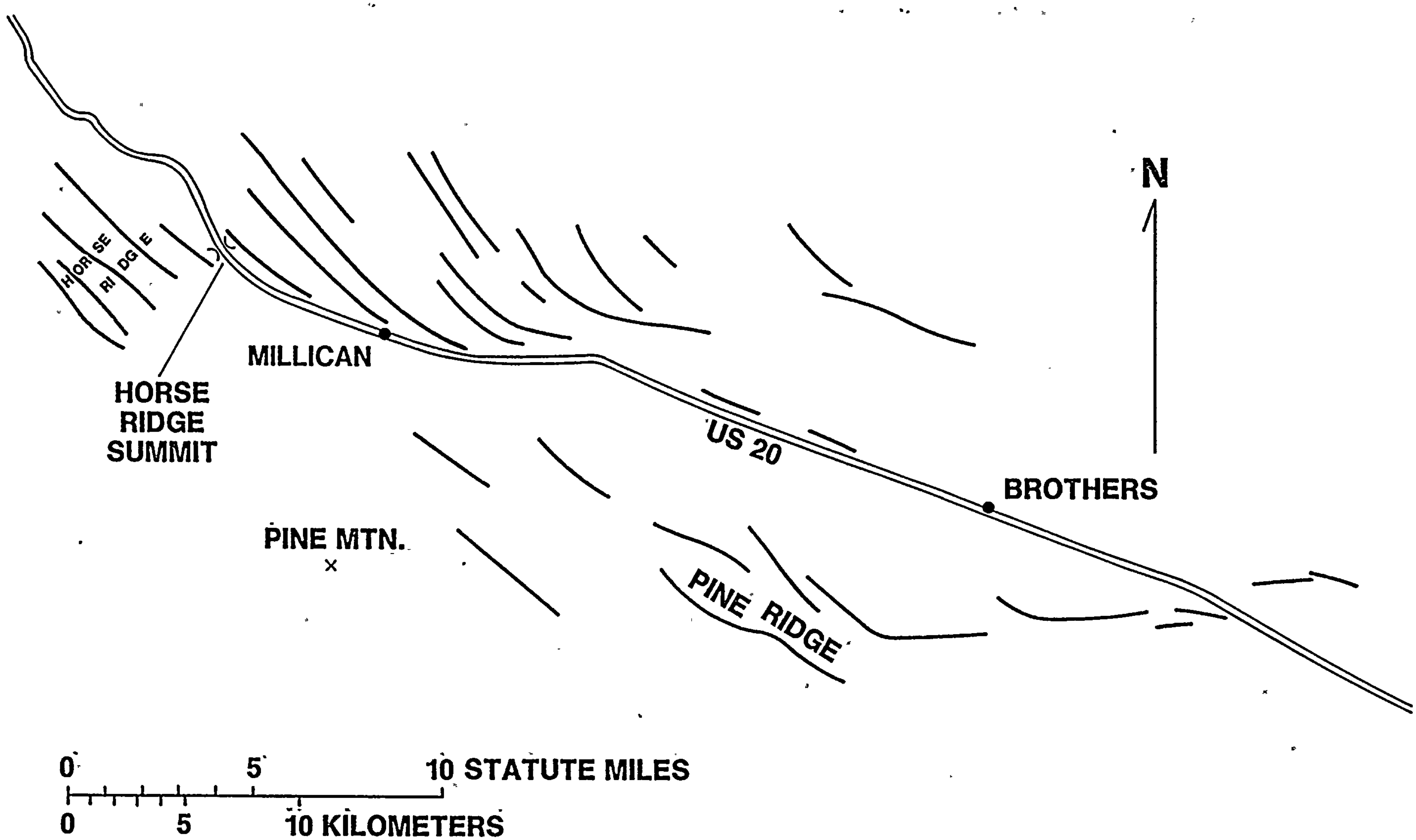


Figure 2.5N-1 *Major topographic linear features within Brothers fault zone, central Oregon: Most features between Horse Ridge Summit and Brothers are scarp-like slopes on the south-western margin of elongate ridges. See text for discussion.*

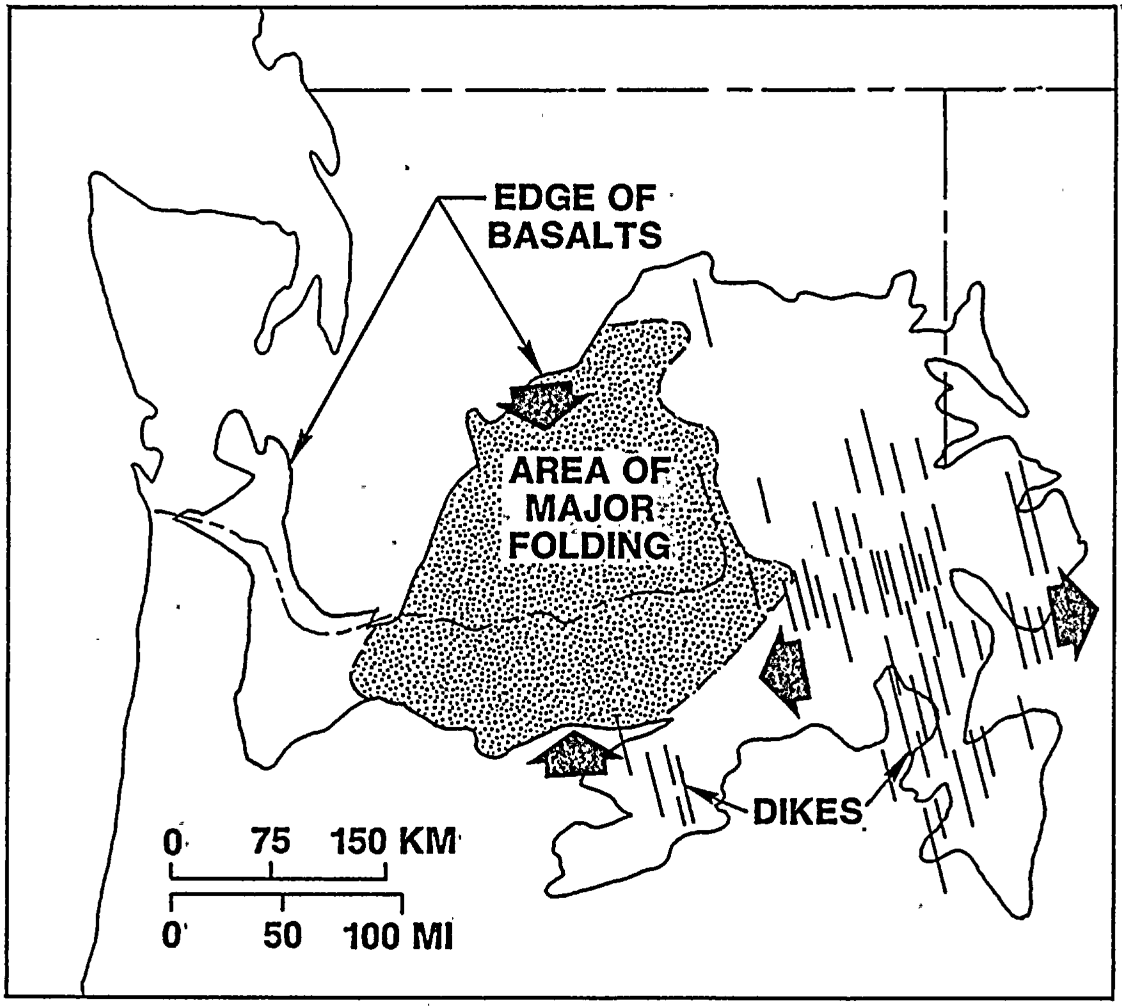


Figure 2.5N-2 *Generalized distribution of feeder dikes for Columbia River Basalts. The edge of the basalt field and the area (stippled) of major folding within the basalts are also shown. Dike distribution from Swanson and Wright (1978).*

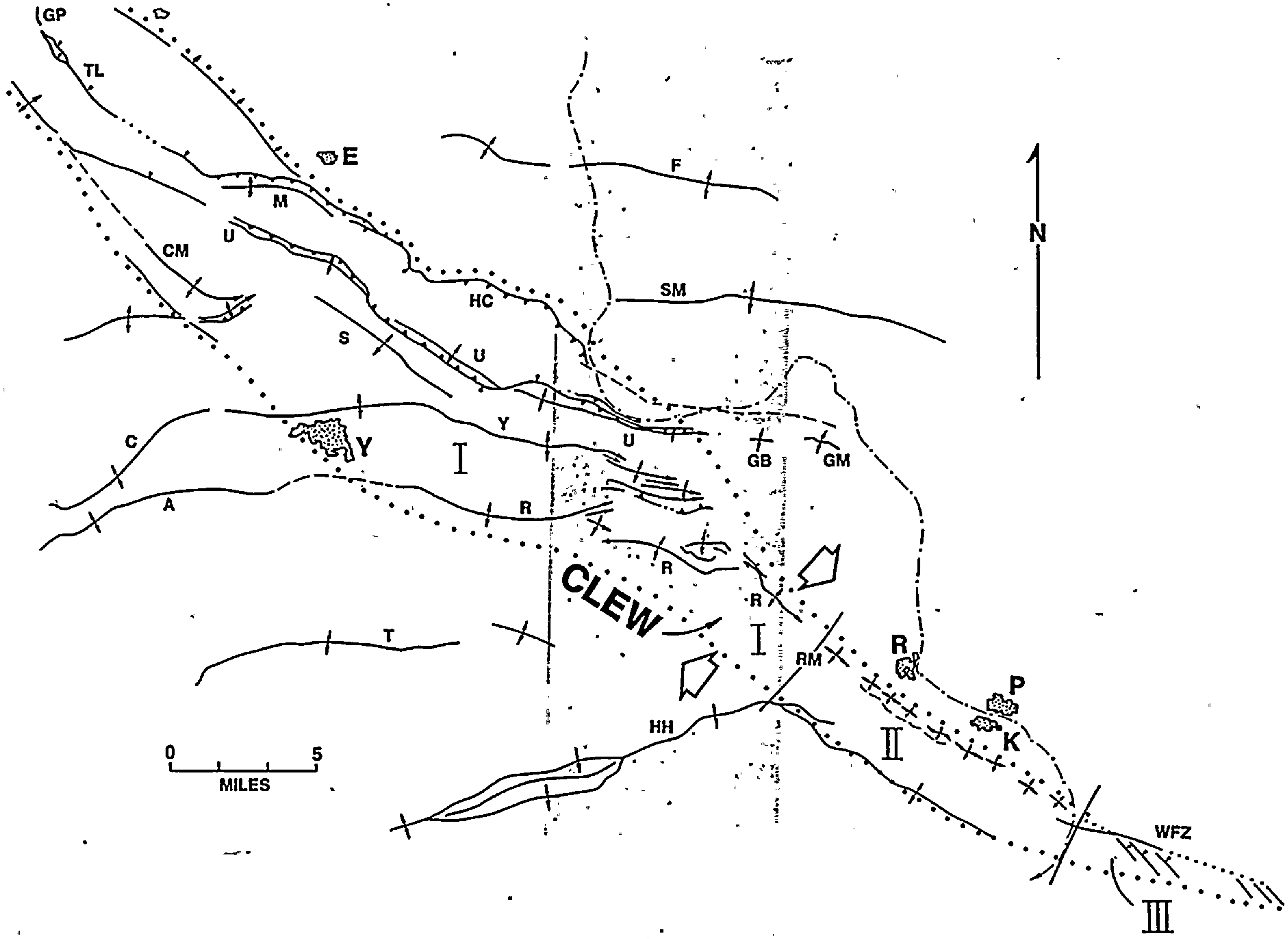
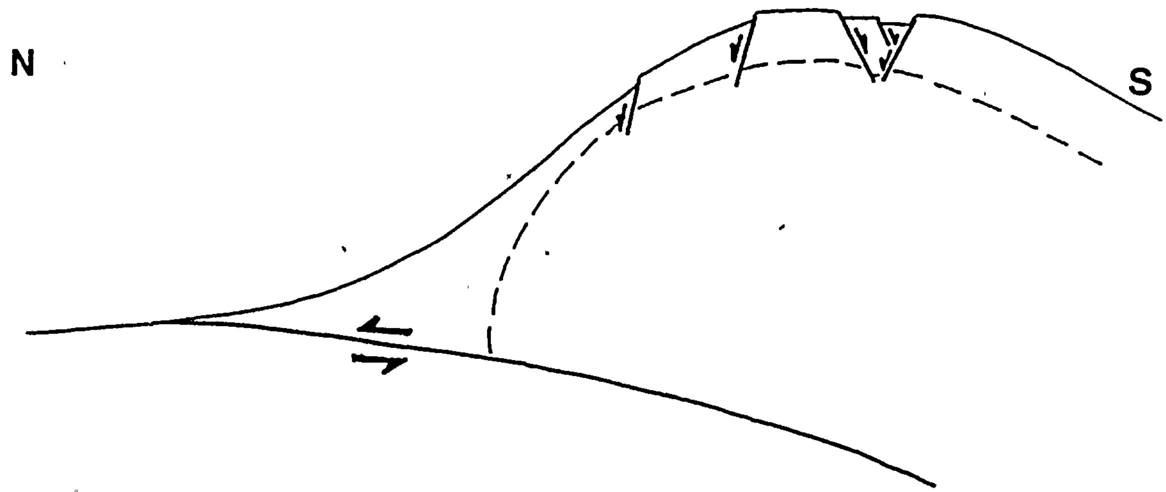
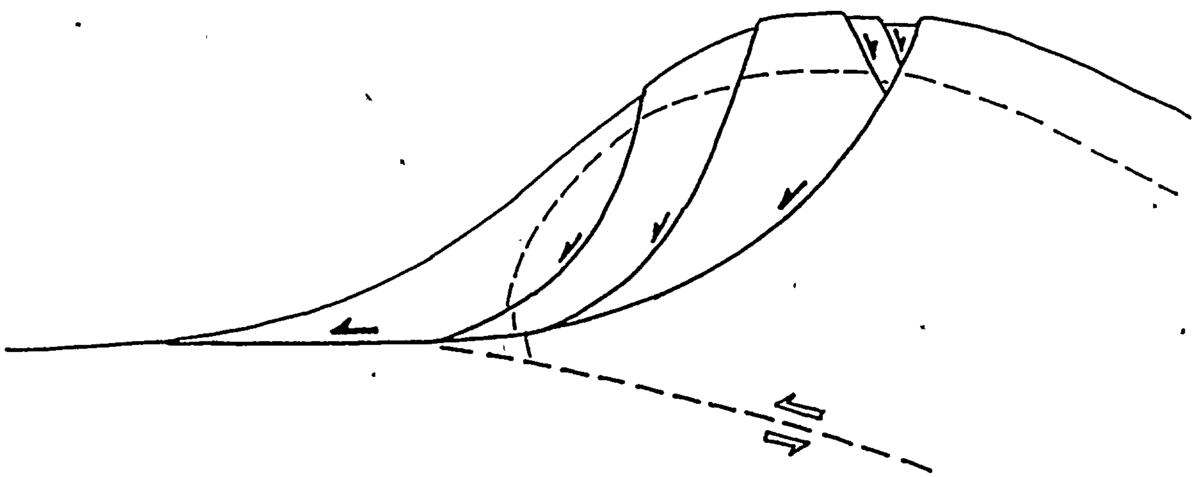


Figure 2.5N-3 *Major structural elements of the south-central Columbia Plateau, Washington (from Kienle and others, 1978). The approximate boundaries of Laubscher's Cle Elum-Wallula lineament (CLEW) are designated by heavy dots. I, II, and III are structural domains within CLEW that are discussed in the text. Stippled areas are cities of Ellensburg (E), Yakima (Y), Richland (R), Pasco (P), and Kennewick (K).*

TOPPENISH RIDGE



THRUST FAULT MODEL



LANDSLIDE MODEL

Figure 2.5N-4 *Alternative structural interpretations for surface ground ruptures along Toppenish Ridge.*

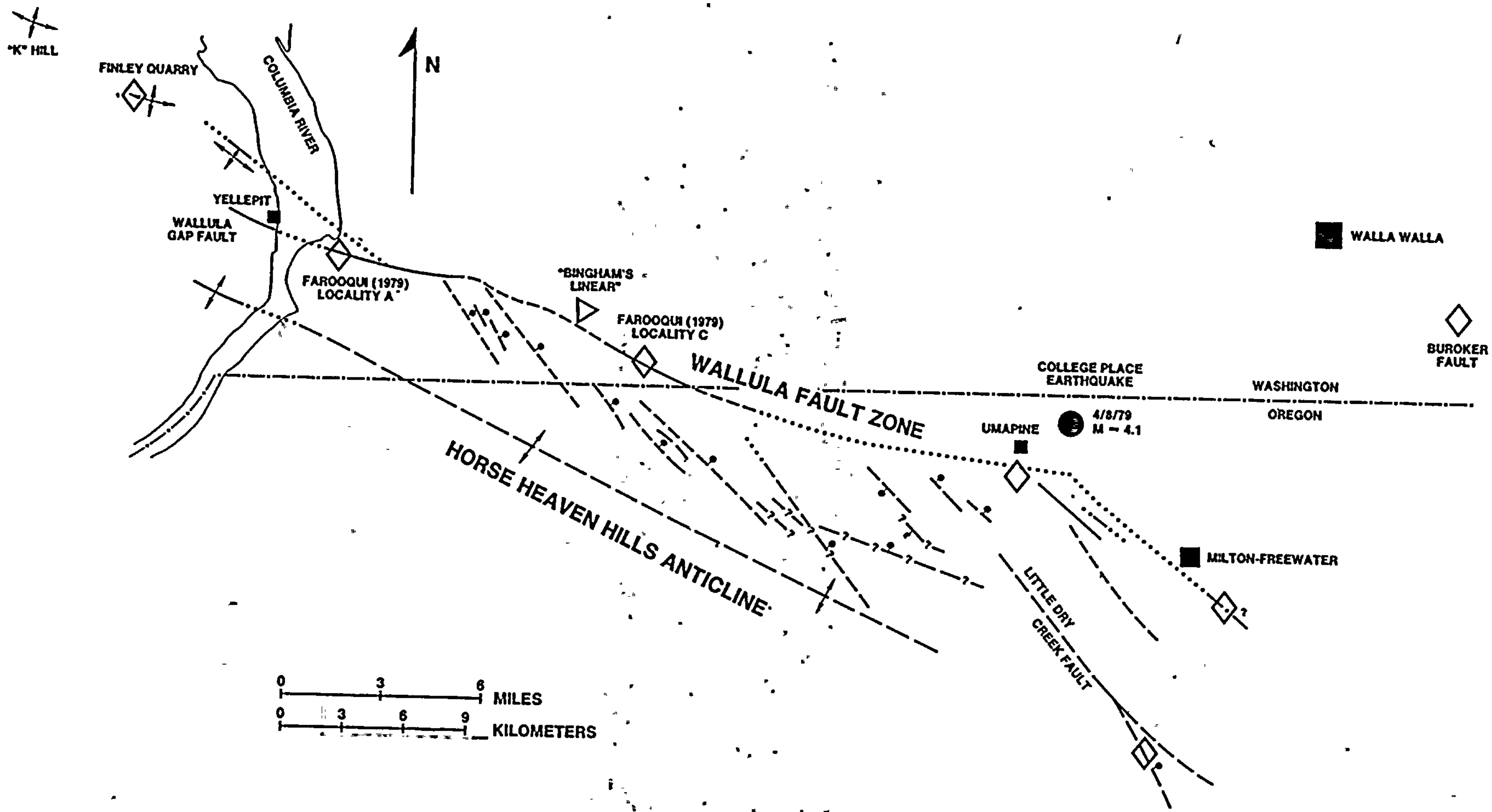


Figure 2.5N-5 *Tectonic map of Wallula fault zone and vicinity (from Kienle and others, 1979) showing localities (diamonds) where Quaternary faulting is confirmed or suspected. Also illustrated are the locations of "Bingham's linear" (triangle) and the epicenter of the 1979 College Place earthquake (black circle).*

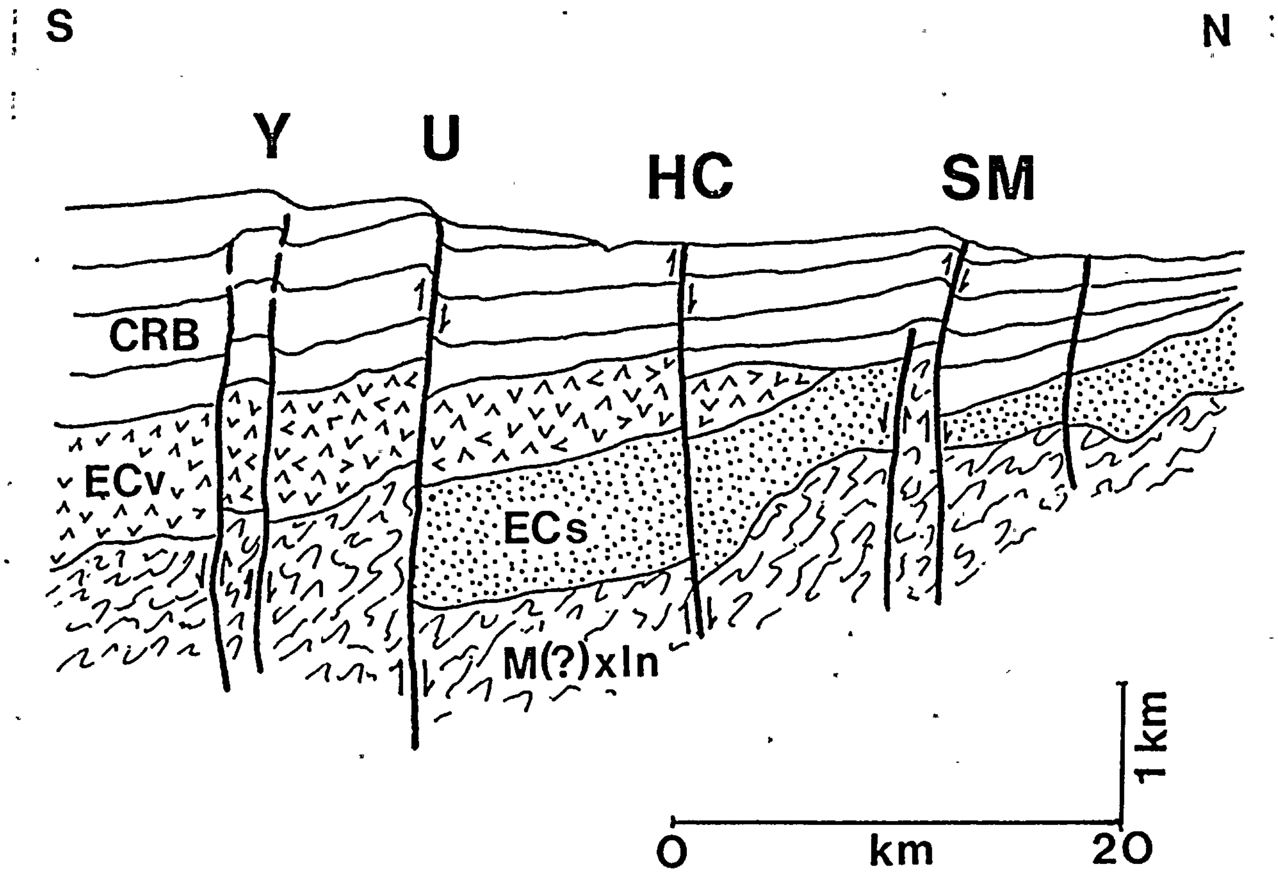


Figure 2.5N-6 *"Thick-skinned" tectonic interpretation for Columbia Plateau folding and faulting from Bentley (1977). Note vertical exaggeration.*

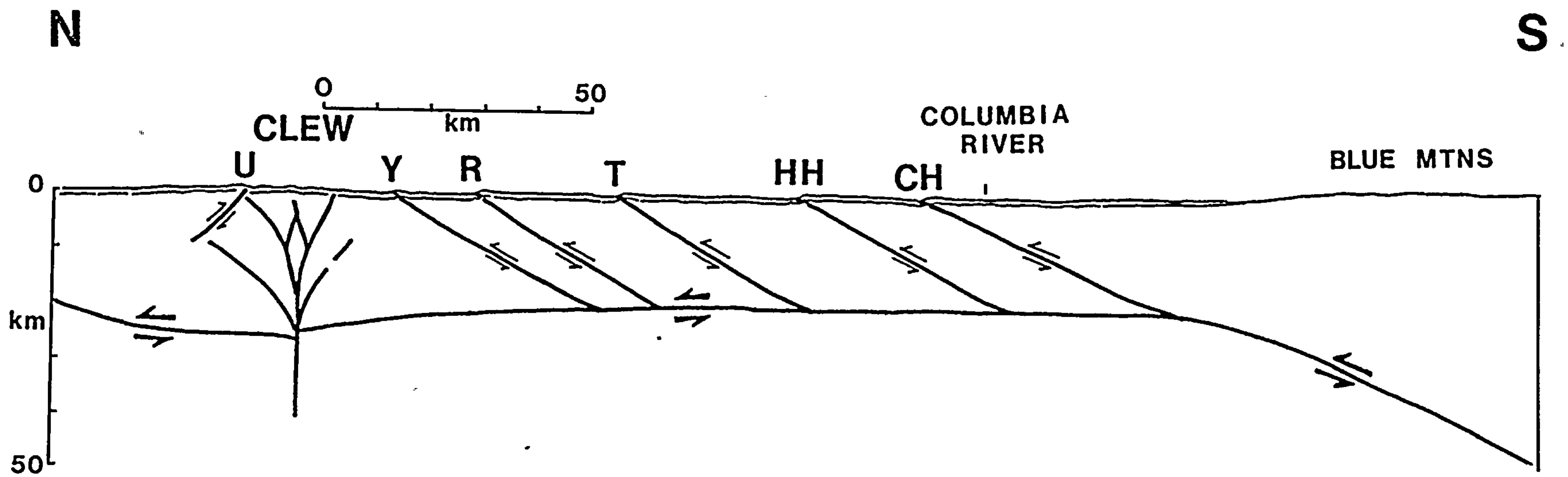


Figure 2.5N-7 *"Thin-skinned" crustal decollement interpretation for Columbia Plateau deformation from Laubscher (1981; 1980 ms).*

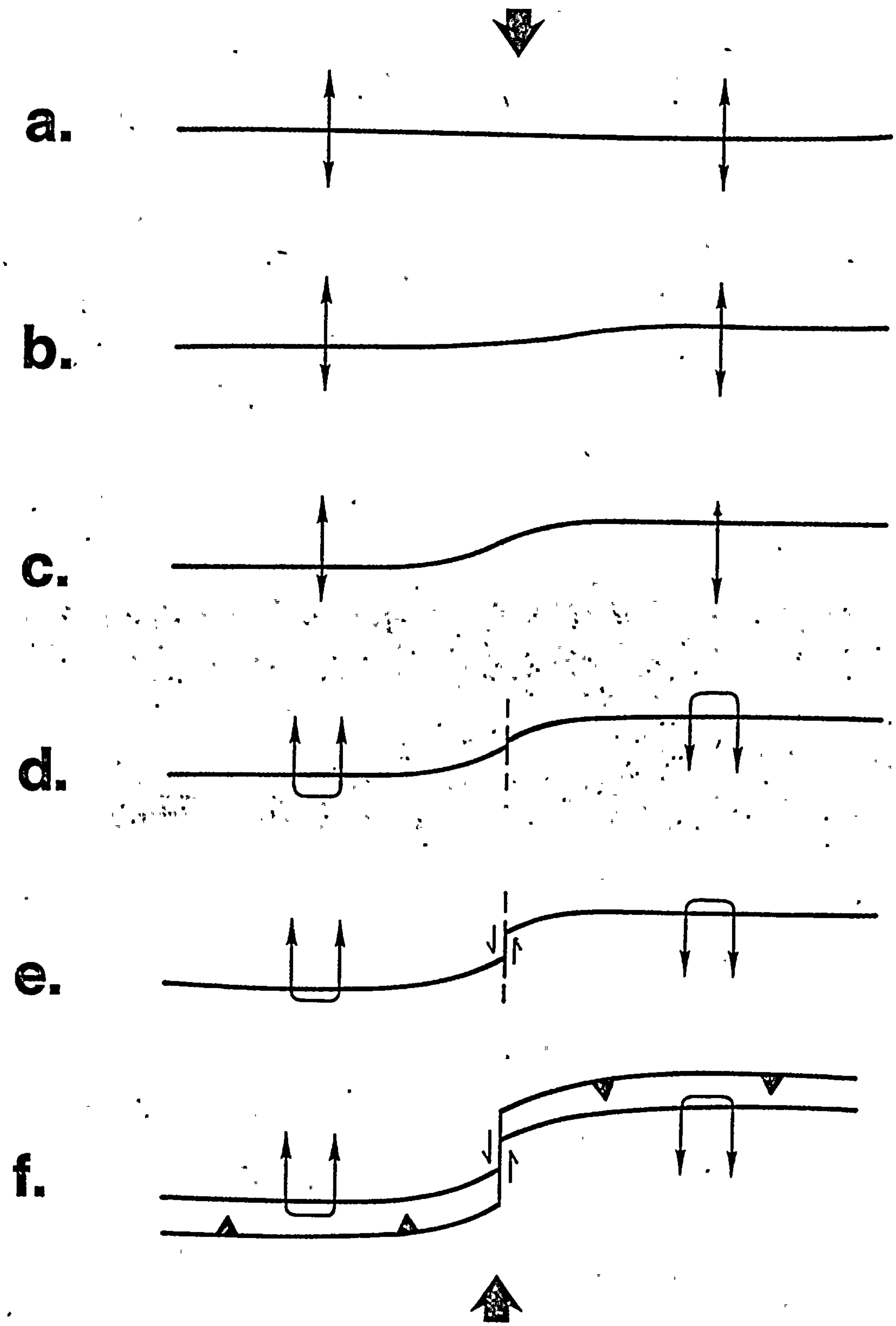


Figure 2.5N-8 *Hypothetical stages in the kinematic development of doubly-vergent anticlinal structures on the Columbia Plateau (e.g. Umtanum, Gable Mountain). Large arrows represent direction of north-south shortening responsible for folding and secondary faulting. Length of arrows on fold axial traces indicates relative dip of fold flanks (the shorter the arrow, the steeper the dip).*

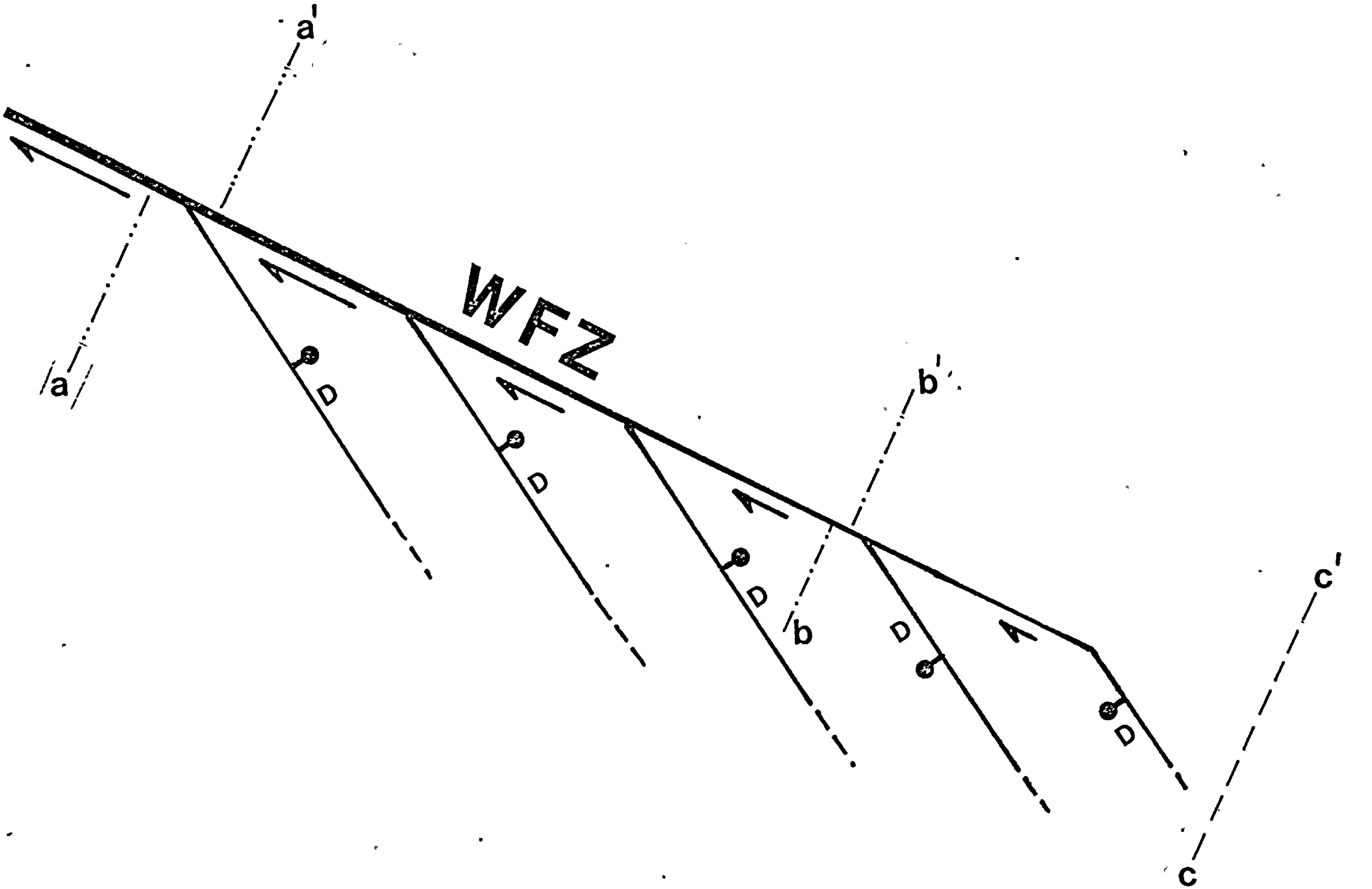


Figure 2.5N-9 *Diagrammatic kinematic interpretation of the Wallula fault zone (compare with Figure 5). Dextral displacement along the Wallula zone is accounted for by differential extension of the southern wall of the zone across en echelon normal faults. AA', BB', CC' illustrate hypothetical linear features with progressively greater offsets to the northwest.*

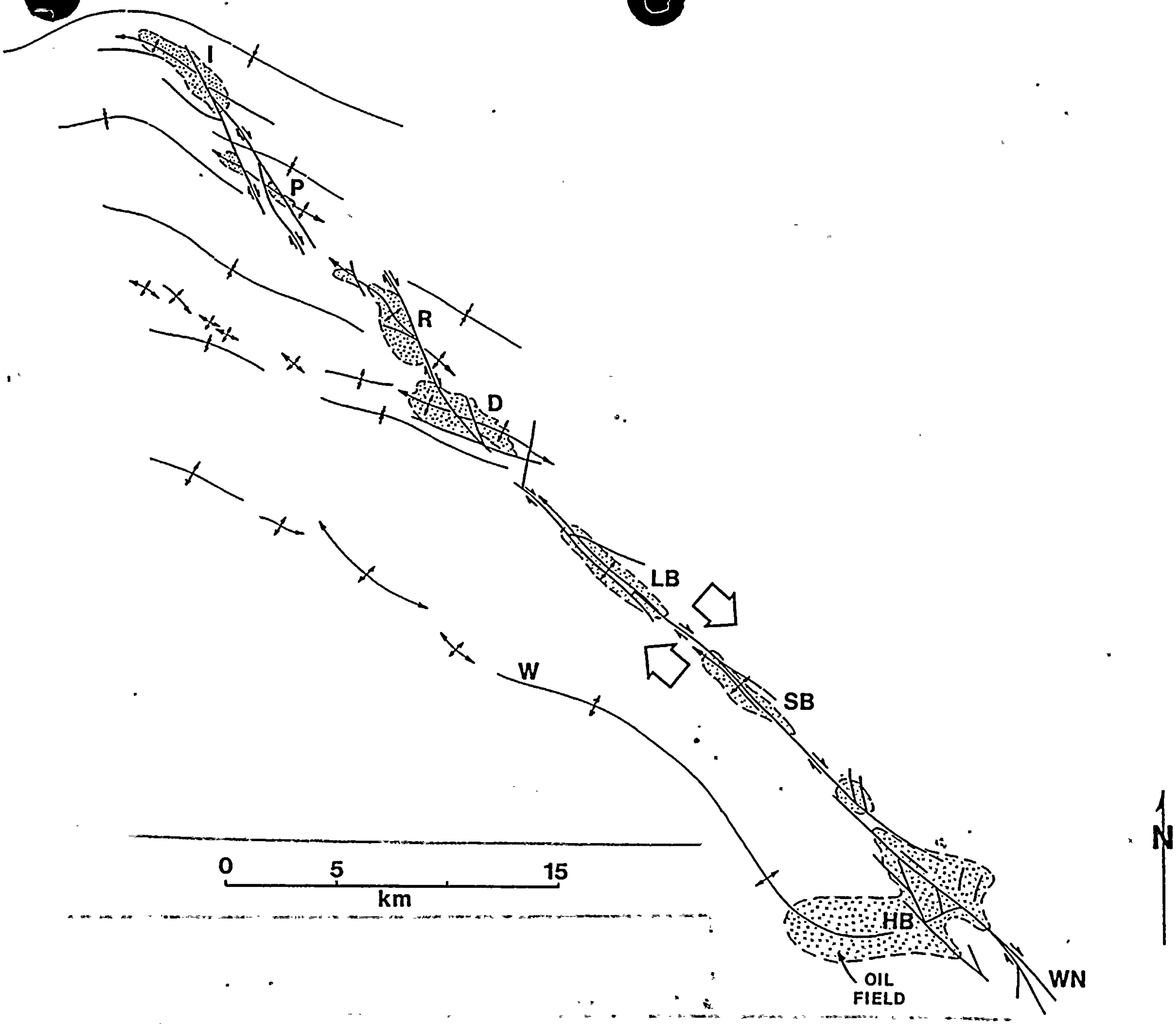


Figure 2.5N-10 *Generalized tectonic map of Newport-Inglewood fault zone, Los Angeles Basin, California (after Harding, 1973; Yeats, 1973).*

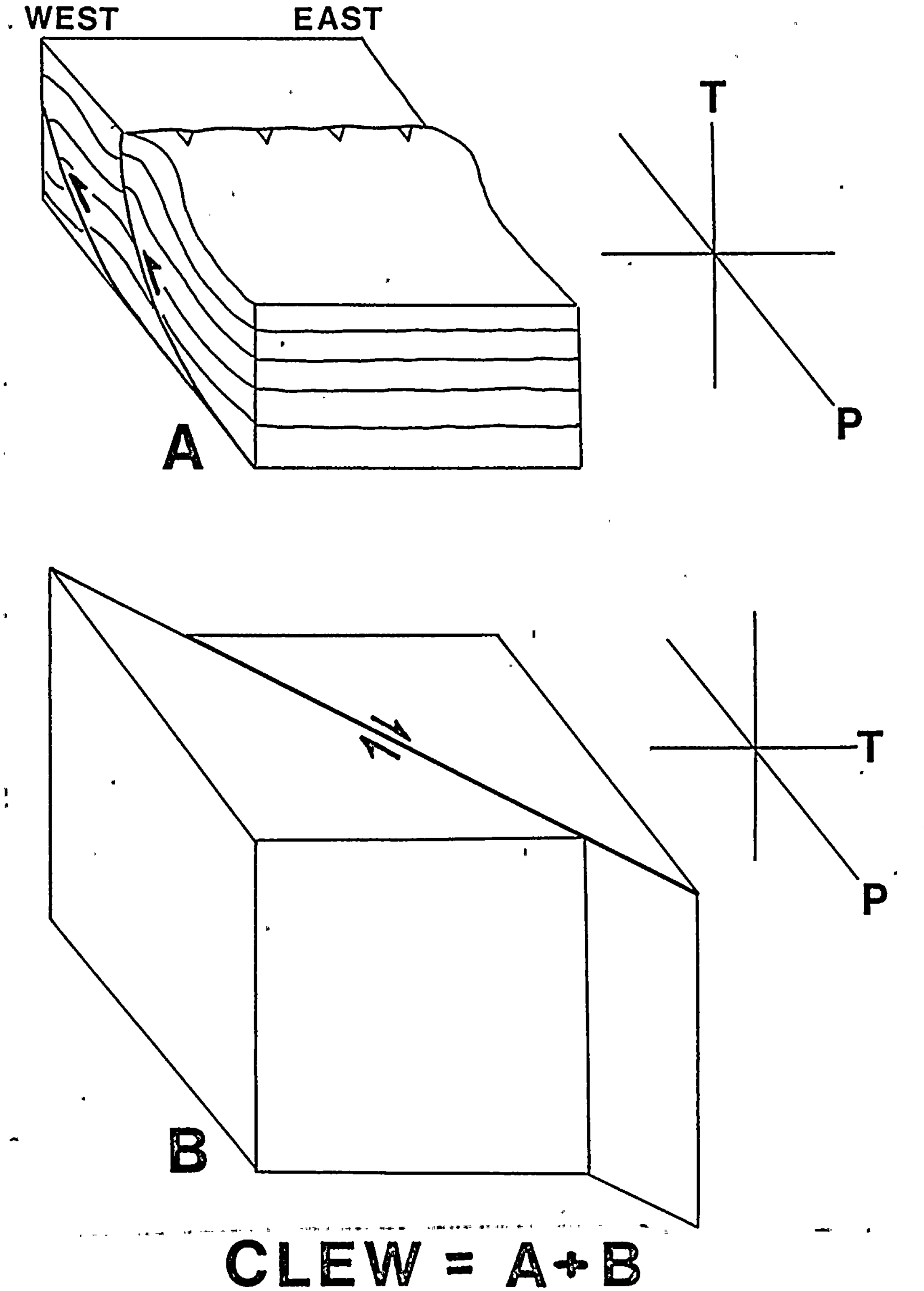


Figure 2.5N-11 *Kinematic interpretations of differential response of plateau stratigraphic units (A) and deeper "basement" rocks (B) to north-south compression in the Columbia Plateau. Although a simple transcurrent fault is shown offsetting basement rocks, such faulting may be considerably more diffuse and the width of the zone of shearing may increase northwestwards from CLEW structural domain II to domain I (see Figure 3). The structural elements which define CLEW (Laubscher, 1977, 1981) are interpreted as interference phenomena between the two styles of deformation. Faulting characteristic of B appears to extend to surficial levels within CLEW domain III, the Wallula fault zone.*

Q. 421.001

Describe the management interface controls for QA activities between WPPSS and the principal contractors, i.e., Burns & Roe, Bechtel, and General Electric, to assure proper implementation of the QA program.

Response:

Interface control for site activities is defined and maintained by procedures, WNP-2 Project Management Instructions (PMIs). These instructions define and control the significant interfaces on the site, primarily those between the Supply System, Burns & Roe, Bechtel, and General Electric. Some of these instructions also control major common working interfaces with other site contractors.

This control is augmented and/or verified by such means as Supply System management meetings, QA audit programs, QA surveillance and similar overview by other Supply System organizations, and the Program Director's monthly program review.

Q. 421.002

Clarify if the " ... Corporate QA Program" (Ref. p. 3) is the same as the " ... Project QA Program" (Ref. p. 12).

Response:

The Supply System has a Corporate Design and Construction QA Program which establishes project QA policy. The words "Corporate QA Program" and "Project QA Program" were inadvertently included. The reason for use of these words relates to the fact that implementation of the Corporate QA Program at WNP-2 differs, in having WNP-2 unique procedures, from that of the other sites and the home office. These differences arise from the unique organization/administrative structure of each project.

We have deleted the words "Corporate" and "WNP-2", noted in the question, from 17.1.1 of the FSAR.*

*Draft FSAR page changes attached.

stet

As the license applicant, the Supply System is responsible for the plant. Therefore, the Supply System ~~WNP-2~~ QA Program and its implementation has been structured to assure that design, procurement, and construction activities are accomplished in accordance with sound engineering principles and practices. Systems, components, and structures that are safety-related, in the context of 10CFR20, 10CFR50, and 10CFR100, are required to be designed, specified, fabricated, installed, and tested in accordance with applicable regulatory requirements, codes, standards, specifications, and procedures.

stet

The description of the Supply System ~~WNP-2~~ Design and Constructon QA Program which follows is of the program as it currently exists. This program evolved from the original quality program which first appeared in Appendix D.O of the PSAR. The changes involved in this evolution process include: NRC requested changes; updates in organization responsibilities and authorities; and the incorporation of new requirements.

17.1.1.1 Organization

The Supply System Managing Director is responsible to the Board of Directors for the overall management of Supply System activities, including the establishment and implementation of policies. The Managing Director resolves issues involving quality brought to his attention because of failure to reach resolution at lower levels of management. Overall Supply System organization is shown on Figure 17.1-1.

The Quality Assurance Director is responsible and accountable to the Managing Director to develop, administer, and assess the implementation of the Supply System ~~Corporate~~ Quality Assurance Program. Included in this responsibility are auditing functions performed on the Supply System WNP-2 quality affecting activities; audits, surveillance or surveys of suppliers of material, equipment, or services for the WNP-2 Project. The Quality Assurance Director has stop work authority. He provides for the review of the status and adequacy of the WNP-2 QA Program on an annual basis.

The Director of Nuclear Safety is responsible and accountable to the Managing Director to develop and administer Licensing, Operational Nuclear Safety, and Design and Nuclear Safety Assessment activities in support of the Project.

The WNP-2 Program Director, as shown on the WNP-2 Project Organizational Chart, Figure 17.1-2, has overall responsibility and authority for all WNP-2 Project activities. He resolves WNP-2 issues involving quality brought to his atten-

tification and solution of startup problems requiring Engineering and/or Construction resolution.

d. Serving as a member of the Plant Operations Committee (POC) for all matters related to the Plant Test Program.

e. Implementing a safe, efficient, and adequate test program in accordance with the requirements of the Test and Startup Program Manual.

f. Preparing and approving Test and Startup instructions.

Startup activities are conducted in accordance with the Operational Quality Assurance Program, topical report WPPSS-QA-004, as referenced in Chapter 17.2.

Systems Turnover - The Deputy Project Manager for Systems Turnover is accountable to the Project Manager and is responsible for:

a. Managing special activities to expedite completion of the WNP-2 Project.

b. Providing support to expedite resolution of outstanding concerns/problems.

c. Performing reverification/review of prior work, as required.

d. Performing evaluations to assure the adequacy of management systems used to control continuing work.

Quality Assurance - The WNP-2 Project Quality Assurance Manager is accountable to the Program Director and is responsible for:

a. Administration of the Quality Assurance Department to develop and verify site implementation of the ~~WNP-2 Project~~ Quality Assurance Program.

b. Interfacing with Engineering to determine whether a nonconforming condition, existing on any safety-related activity, is reportable under the requirements of 10CFR50.55(e) or 10CFR21.

Q. 421.003

Describe in more detail the QA responsibilities of each of the organizational elements identified in Figure 17.1.1-1 down to and including the WNP-2 Program Director level.

Response:

Figure 17.1.1-1 has been changed to Figure 17.1-1.

Descriptions of the responsibilities of the organizational elements identified in Figure 17.1-1 have been expanded in 17.1.1.1, including Deputy Managing Director, Technical Director, and Contracts and Materials Management Director.*

*Draft FSAR page change attached.

Ref. 421.3

As the license applicant, the Supply System is responsible for the plant. Therefore, the Supply System WNP-2 QA Program and its implementation has been structured to assure that design, procurement, and construction activities are accomplished in accordance with sound engineering principles and practices. Systems, components, and structures that are safety-related, in the context of 10CFR20, 10CFR50, and 10CFR100, are required to be designed, specified, fabricated, installed, and tested in accordance with applicable regulatory requirements, codes, standards, specifications, and procedures.

The description of the Supply System WNP-2 Design and Constructon QA Program which follows is of the program as it currently exists. This program evolved from the original quality program which first appeared in Appendix D.O of the PSAR. The changes involved in this evolution process include: NRC requested changes; updates in organization responsibilities and authorities; and the incorporation of new requirements.

17.1.1.1 Organization

The Supply System Managing Director is responsible to the Board of Directors for the overall management of Supply System activities, including the establishment and implementation of policies. The Managing Director resolves issues involving quality brought to his attention because of failure to reach resolution at lower levels of management. Overall Supply System organization is shown on Figure 17.1-1. ← Insert A

A

The Quality Assurance Director is responsible and accountable to the Managing Director to develop, administer, and assess the implementation of the Supply System Corporate Quality Assurance Program. Included in this responsibility are auditing functions performed on the Supply System WNP-2 quality affecting activities; audits, surveillance or surveys of suppliers of material, equipment, or services for the WNP-2 Project. The Quality Assurance Director has stop work authority. He provides for the review of the status and adequacy of the WNP-2 QA Program on an annual basis.

The Director of Nuclear Safety is responsible and accountable to the Managing Director to develop and administer Licensing, Operational Nuclear Safety, and Design and Nuclear Safety Assessment activities in support of the Project. ← Insert B & C

B & C

The WNP-2 Program Director, as shown on the WNP-2 Project Organizational Chart, Figure 17.1-2, has overall responsibility and authority for all WNP-2 Project activities. He resolves WNP-2 issues involving quality brought to his atten-

Insert (A)

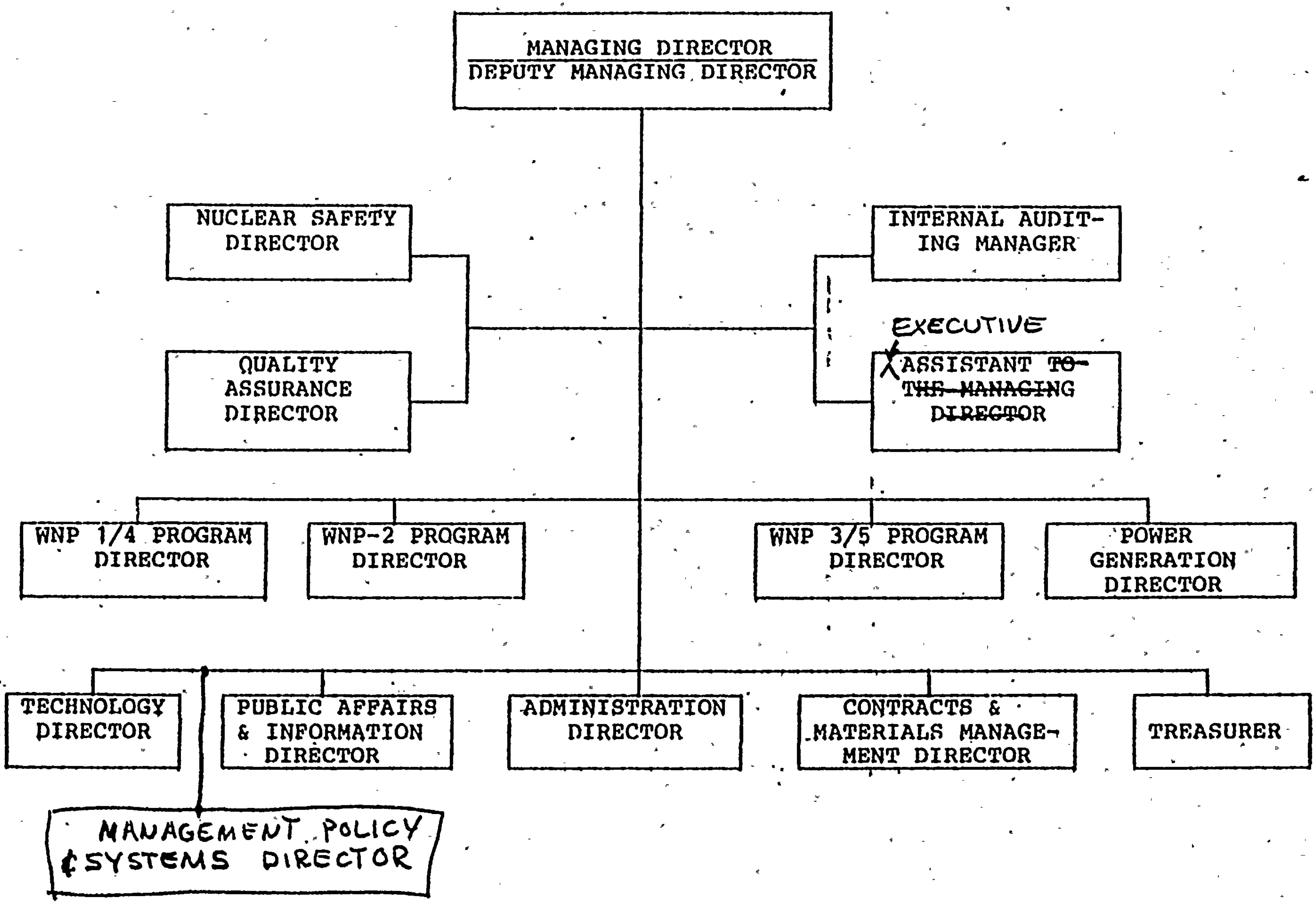
The Deputy Managing Director is responsible and accountable to the Managing Director for: 1. coordinating and integrating the activities of Supply System organizations; 2. supporting and advising the Managing Director in his functions of leadership and evaluation; and 3. acting for the Managing Director as and when required.

Insert (B)

The Technical Director is responsible and accountable to the Managing Director for technical support of Supply System activities from a centralized organization. Functions which are encompassed by this organization include corporate engineering, nuclear fuel management, environmental programs, corporate performance and project support.

Insert (C)

The Director, Contracts and Materials Management is responsible and accountable to the Executive Director for the procurement and control of materials, equipment and services of the Supply System. This includes the Headquarters and Project Business organizations which provide support to the Program Directors for procurement, contract management, contract administration, including commercial claims analysis and negotiation, business management systems and contract reporting/measurement systems, and the Fuel Contracts organization which provides support to the Fuel Supply Department for nuclear fuel procurement and administration. Support is also provided to the Program Director for control of materials, equipment and services through the Materials Management organization.



WASHINGTON PUBLIC POWER SUPPLY SYSTEM
NUCLEAR PROJECT NO. 2

SUPPLY SYSTEM ORGANIZATION CHART

FIGURE 17.1-1

AMENDMENT NO. 17
July 1981

Q. 421.004

Because he reports to the Program Director, it appears that the Project Quality Assurance Manager is not sufficiently free from the pressures of cost and schedules to effectively implement his responsibilities. Describe how this situation will not exist and also his interface role with the Quality Assurance Director.

Response:

The Supply System reorganization of 1981 clearly defined and established the Program Director as having the authority and responsibility for all aspects of the project.

The Program Director is responsible and accountable to the Managing Director for the safe, successful completion, start-up and initial power generation of WNP-2 within approved schedules and budgets. The WNP-2 Program Director directs overall engineering, program management, construction, operations and quality assurance.

The Project Quality Assurance Manager reports to the Program Director at the project and is provided independence from the Supply System organizations responsible for engineering, procurement and construction, and is free from the responsibility of cost and scheduling during procurement, design and construction and startup.

The Project Quality Assurance Manager has the freedom and authority to identify quality problems, initiate, recommend or provide corrective actions, verify the implementation of the corrective action and control further processing, delivery or installation of a nonconforming item, or a deficiency or unsatisfactory condition until proper disposition has been made, including stopping work for quality reasons.

The Project Quality Assurance Manager shall be responsible for:

a) verification of the implementation of the Quality Assurance Program Description and QA Manuals;

b) Stop Work Authority;

c) identification and reporting of nonconformances;

d) verification by audits and surveillances that the Contractor's and other project organizations are implementing applicable quality requirements;

e) assuring that adequate staffing is obtained to implement QA actions at the project;

f) the assignment of adequately trained and qualified/certified personnel to perform quality verification activities;

g) overview of the CM approval of Contractor's procedures and instructions;

h) reporting to the Program Director significant conditions adverse to quality;

i) reporting all QA problems and trends to the Director of Quality Assurance for use in developing standards for QA Management Systems to preclude repetition of QA problems.

Since the Project Quality Assurance Manager reports to the Program Director, the highest possible level at the project, he has the best possible access to the management directing actions on the project.

The Quality Assurance Director reports to the Managing Director and is responsible for the overall development, implementation, and assessment of the Supply System QA Programs. Adequacy of implementation of these programs at the projects is the responsibility of the Project Quality Assurance Manager. The Project Quality Assurance Manager maintains lines of communication with the Quality Assurance Director concerning quality matters of mutual concern.

Q. 421.005

Describe the QA responsibilities of WPPSS Engineering (Ref. Figure 17.1.1-3) with regards to Burns & Roe Engineering, e.g., perform design verification?

Response:

The Archtect/Engineer is responsible for design of safety-related systems and components and retains responsibility for design control, including design verification. WNP-2 Supply System Engineering conducts a continuing management overview of the A/E with primary emphasis on identification and resolution of problems.

Q. 421.006

Clarify if the stop work authority of the QA Director (Ref. p. 3), the Project QA Manager (Ref. p. 12), and QA personnel (Ref. p. 15) is delineated in writing.

Response:

Stop work authorities are specified and prescribed in writing. The QA Director's and the Project QA Managers' stop work authority is delineated in the Design and Construction QA Program, QAR 2-1. The stop work authority of the Project QA Manager and QA, and other Supply System project personnel is further delineated in WNP-2 Project Instructions.

Q. 421.007

Describe the qualifications for the positions of QA Director and Project QA Manager.

Response:

For the QA Director, qualifications include a BS degree in engineering, or a related field, and ten years broad experience in design, procurement, construction and operations in the nuclear industry. Directly-related experience may be substituted for academic requirements where the candidate's record of performance clearly demonstrates that the candidate is able to staff the position without question. Requirements include knowledge of generally accepted policies and procedures as they relate to Quality Assurance Programs; knowledge of the NRC Quality Assurance criteria; knowledge of significance of licensing commitments such as those documented on the FSAR and PSAR; knowledge of relevant regulations and rulings developed by Federal and State agencies; knowledge and ability in the areas of planning, organization, measurement, decision making; must be capable of broad overall performance under multiple project conditions.

Minimum qualifications for the Project QA Manager include a BS degree in engineering, or a related field, and ten years experience in nuclear quality assurance or technically-related activities. Directly-related experience may be substituted for academic requirements where the candidate's record of performance clearly demonstrates that the candidate is able to staff the position without question. Requirements include knowledge of generally accepted policies and procedures as they relate to Quality Assurance programs; knowledge of the NRC Quality Assurance criteria; knowledge of generic PSAR and FSAR requirements; knowledge of relevant regulations and rulings developed by Federal and State agencies. Must have demonstrated ability to effectively manage a team of multi-discipline QA personnel and accomplish work within established plans, budgets and schedules.

Q. 421.008

Give a brief summary of WPPSS' corporate QA policies.

Response:

Supply System Quality Assurance is responsible for establishing Quality Assurance policy, goals, and objectives through the development and administration of the Supply System QA Program. This program is defined in the Supply System QA Program Manual developed by the Manager, Quality Engineering, and reviewed and approved by the Director, Quality Assurance and endorsed by the Managing Director.

Supply System QA personnel have the authority and responsibility to perform any actions necessary, including Stop Work Authority, to accomplish their mandate as delineated in the Quality Assurance Manual. This responsibility and authority is stated in a Management Statement signed by the Supply System Managing Director. The Management Statement appears in each Quality Assurance Manual. In matters of conflict regarding Qaulity Assurance policies or the Quality Assurance organization's authority to enforce them at the working level, the Director of Quality Assurance has direct access to all levels of upper management including the Managing Director for satisfactory resolution.

Q. 421.009

Describe the provisions which assure that procedures required to implement the QA program are consistent with QA program commitments and corporate policies (should be established at the Managing Director level) and are properly documented, controlled, and made mandatory through a policy statement or equivalent document signed by a responsible official.

Response:

The Supply System Design and Construction QA Program Manual delineates the methods by which the Supply System complies with the criteria of 10CFR50, Appendix B. Implementation of the Supply System QA Program assures control of the activities affecting quality.

The Supply System Design and Construction QA Program requires Burns and Roe and Bechtel to have based the development of their QA Program, and the procedures for implementation, on the requirements delineated in 10CFR50, Appendix B.

Contractors and vendors, including Burns and Roe, Bechtel and GE, are required to have written instructions, procedures, policies and/or drawings which govern their quality-related activities and which include appropriate quantitative and qualitative acceptance/rejection criteria. In addition, contractors and vendors are required to impose similar documentation requirements on their subcontractors.

For additional discussion see response to Question 421.008.

Q. 421.010

On p. 11, it is noted that "startup activities will be conducted in accordance with the Operational QA Program ... " Clarify if the preoperational test program will be covered by the design and construction or the operational QA program.

Response:

Preoperational and Startup Tests are covered by the Operational QA Program. This is described in the Operational QA Program Description, WPPSS-QA-004, Rev. 5, effective May 11, 1981, in Section 11 on Test Control.

Q. 421.011

Describe the criteria for determining the number of individuals in the specific QA organization elements.

Response:

The number of individuals in any organization is primarily a function of the organization's scope of work and management judgement as to the number of personnel required to accomplish the work. The WNP-2 QA organization is presently budgeted for 29 QA personnel.

Q. 421.012

Provide a commitment that the development, control, and use of computer code programs will be conducted in accordance with the QA program.

Response:

The Supply System has added such a commitment to 17.1.1.3.*

*Draft FSAR page change attached

The WNP-2 Quality Assurance Program is audited on a regular basis by the Home Office Supply System Audit Section.

Contractors who perform safety-related work include the Architect/Engineer, NSSS Supplier, and Construction Manager. These contractors are required to establsh and implement QA Programs consistent with the applicable requirements of 10CFR Part 50, Appendix B. These programs are reviewed for adequacy by WNP-2 Project personnel. The Architect/Engineer, NSSS Supplier, and Construction Management Contractor quality-related functions are controlled in accordance with the programs described in 17.1.2, 17.1.3 and 17.1.4, respectively.

17.1.1.3 Design Control

Burns and Roe, as Architect/Engineer, is responsible for specifying the overall design of the project, except that General Electric is responsible for design of the NSSS System. Design by other Project Organizations (contractors) is performed in accordance with an approved QA Program. The details of the Burns and Roe and GE WNP-2 QA Programs are described in 17.1.2 and 17.1.3 respectively.

Design control is performed by project organizations in accordance with approved procedures and/or instructions.

Design input, such as design bases, performance requirements, regulatory requirements, appropriate quality standards, and industry codes and standards are properly identified, documented, and translated into design documents, such as drawings and specifications.

Procedures describe the controls established for the review, approval, release, distribution, and revision of design documents involving design interfaces.

Changes in design, including field changes, and the reason for changes, are documented, controlled, and reviewed in accordance with measures commensurate with those applied to the original activity.

Insert, attached

17.1.1.4 Procurement Document Control

Procurement of material, equipment, and services for the Project is accomplished through procurement specifications, contracts, or purchase orders which are prepared, reviewed, and approved by cognizant personnel. Procedures require that procurement documents incorporate the applicable quality assurance, regulatory code, and design requirements. The procurement documents require that bidders submit a Quality

Insert to 17.1-8:

Computer codes are developed, controlled, and used in accordance with quality program requirements.

Q. 421.013

Describe the provisions for notifying the NRC for review and acceptance of changes (1) in the accepted QA program description as presented or referenced in the SAR or SSAR prior to implementation, and (2) in organizational elements within 30 days after announcement. (Note - editorial changes or personnel rassignments of a non-substantive nature do not require NRC notification.)

Response:

The Supply System as a matter of policy has submitted substantive changes to the QA Program and organizational elements within the limitations as noted in the question.

Q. 421.014

On page 14 modify the second paragraph to provide an additional commitment to "comply with 10 CFR 50.55a and the regulatory position of the regulatory guides specified in Appendix C.3 of the FSAR." In addition, modify Appendix C.3 to address the following regulatory guides or describe acceptable alternatives: 1.28-Rev. 2; 1.29-Rev. 3; 1.30; 1.39-Rev. 2; 1.74; 1.116; 1.123-Rev. 1; 1.144-Rev. 1; and 1.146.

Response:

The Supply System has referenced 10CFR Part 50, as well as other pertinent parts of Title 10, in the second paragraph of 17.1.1. This reference includes acknowledgement that regulatory requirements, codes and standards are applicable to the design and construction of the plant.

The Supply System has addressed Regulatory Guides 1.30, 1.74, and 1.116 in Appendix C.3. Regulatory Guides 1.144-Rev. 1 and 1.146 are currently being evaluated. We will add statements of conformance on these two guides to Appendix C.3 on or before September 1, 1981, and will incorporate into the next amendment to the FSAR.

The remaining regulatory guide revisions listed in the question have been evaluated by the Supply System. In these instances, regulatory guide conformance statements on the revision levels specified in Appendix C.3 are considered to provide for adequate quality per our project commitments.

Q. 421.015

Identify existing or proposed QA procedures to reflect that each criterion of 10CFR50, Appendix B will be met by documented procedures.

Response:

The Design and Construction QA Program, in QAR 2-1, provides a matrix of procedures vs. criteria. This matrix has been added to 17.1.1.2.*

*Draft FSAR page changes attached.

Appendix B to 10CFR Part 50, "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants", and applicable regulatory guides as specified in Appendix C.3 of the FSAR.

The Supply System's design and construction activities at WNP-2 are performed in accordance with the policies established by the WPPSS QA Program Manual for Design and Construction. Insert attached.

The WNP-2 Project Management Instructions (PMI) Manual delineates the responsibilities of and interfaces between project organizations. Each project organization is responsible for developing and using implementing procedures/instructions for their assigned functions.

Quality Assurance Instructions, Project Procurement Manuals, and other procedures or instructions pertinent to specific departmental functions describe the measures used to implement the provisions of the programs.

The Supply System Quality Assurance Manager assigned to the WNP-2 Project is responsible for establishing and administering the WNP-2 Quality Assurance policies, goals, and objectives of the Quality Assurance Program and verifying adequate implementation.

The WNP-2 Quality Assurance personnel have the authority and responsibility to perform the necessary actions, including provisions for stop work authority, to accomplish their assignments.

To assure that WNP-2 Project personnel who perform quality-related activities are cognizant of the quality requirements, they are provided training and indoctrination as prescribed by the Project Training Program. The initial indoctrination includes discussions as to the purpose of applicable codes and standards and familiarization with Appendix B, 10 CFR Parts 50, 50.55(e), and 10CFR Part 21. The training phase includes instructions on the Project QA policies and instructions on specific quality activities directly related to individual job functions. Personnel whose activities require specific qualifications such as nondestructive testing, audit, inspection, and testing are suitably evaluated, trained as appropriate, and certified.

Training sessions are an ongoing activity and are appropriately documented. Nondestructive test, audit, test, and inspection personnel qualification records are maintained.

Insert to p. 17.1-7

~~The Supply System Design and Construction Quality Assurance Program Manual contains the written policies and procedures structured from the requirements of ANSI N45.2-1971 and 10CFR50, Appendix B, by which the Supply System performs its related quality assurance activities.~~ A matrix of the Supply System QA Program procedures and the corresponding criteria of 10CFR50, Appendix B, appears in the table below followed by description of the scope covered by these procedures.

	10CFR50, Appendix B Criteria	Supply System QAR
I	Organization	QAR-1
II	Quality Assurance Program	QAR-2
III	Design Control	QAR-3
IV	Procurement Document Control	QAR-4
V	Instructions, Procedures and Drawings	QAR-5
VI	Document Control	QAR-6
VII	Control of Purchased Materials, Equipment and Services	QAR-7
VIII	Identification and Control of Material, Parts and Components	QAR-8
IX	Control of Special Processes	QAR-9
X	Inspection	QAR-10
XI	Test Control	QAR-11
XII	Control of Measuring and Test Equipment	QAR-12
XIII	Handling, Storage and Shipping	QAR-13
XIV	Inspection, Test and Operating Status	QAR-14
XV	Nonconforming Materials, Parts or Components	QAR-15
XVI	Corrective Action	QAR-16
XVII	Quality Assurance Records	QAR-17
XVIII	Audits	QAR-18

a) Organization, QAR-1

Establishes an organizational structure that will direct the resources of the Supply System and its contractors to engineer, design, procure, fabricate, manufacture, install, construct and test the Supply System Nuclear Projects to maximize safety, reliability and efficiency.

b) Program, QAR-2

Defines the Quality Assurance Program established by the Supply System for design and construction. Included in this program is a system for classifying structures, systems, components, design characteristics and procurement documents to determine the Quality Assurance activities associated with each item.

c) Design Control, QAR-3

Establishes a system of independent reviews to assure applicable quality regulatory, code and design basis requirements are properly translated into design and procurement documents for each structure, system and component. The documented review provides a check for design adequacy, inspectability and compatibility with intended usage.

d) Procurement Document Control, QAR-4

Establishes a system to assure that procurement documents and changes thereto incorporate the technical and quality assurance requirements necessary to assure the quality and integrity of procured material, equipment and services.

e) Instructions, Procedures and Drawings, QAR-5

Establishes system defining the requirements and responsibilities controlling the preparation, review, approval and release of instructions, procedures and drawings which implement quality requirements.

f) Document Control, QAR-6

Establishes a system to control the issuance of documents, including changes thereto, which prescribe activities affecting quality.

g) Control of Purchased Material, Equipment and Services, QAR-7

Establishes a system to assure material, equipment and services are procured in accordance with the requirements specified in the procurement documents.

h) Identification and Control of Materials, Parts and Components, QAR-8

Establishes a system for the identification and control of material, parts, components, equipment and partially-completed assemblies to assure that items incorporated into the plant are of proper configuration and, when necessary, traceable to all supporting quality assurance documentation.

i) Control of Special Processes, QAR-9

Establishes a system for the control of special processes.

j) Inspection, QAR-10

Establishes a system which assures the program requirements for inspection are delineated in the specifications and contracts and assures that inspection and surveillance activities are performed in accordance with predetermined requirements delineated in written instructions in a planned and systematic manner.

k) Test Control, QAR-11

Establishes a system to assure that plant testing activities are performed in accordance with predetermined requirements, approved and delineated in written instructions.

l) Control of Measuring and Test Equipment, QAR-12

Establishes a system for the control, calibration and adjustment of tools, gauges, instruments and other inspection, measuring, testing and maintenance devices at specified periods to assure the useage of proper type, range and accuracy necessary to verify conformance to established requirements.

m) Handling, Storage and Shipping, QAR-13

Establishes system to control the handling, storage, shipping, cleaning and preservation of material, parts, components and equipment in accordance with written and approved procedures, instructions and recommendations, to assure that the designed integrity and functionality of the item are maintained.

n) Inspection, Test and Operating Status, QAR-14

Establishes a system to indicate the inspection, test and operating status for all structures, systems or components to preclude the inadvertent bypassing of their inspection and test requirements and to prevent their inadvertent operation.

o) Nonconforming Material, Parts or Components, QAR-15

Establishes a system to assure that nonconformances are identified, documented, segregated or otherwise controlled, prevented from inadvertent use or installation and that notification of actions taken is transmitted to the affected parties.

p) Corrective Action, QAR-16

Establishes a system to assure that significant conditions adverse to quality are identified, the cause determined, documented, brought to the attention of upper management, corrected as soon as possible and that measures are taken to preclude repetition.

q) Quality Assurance Records, QAR-17

Establishes a system for the control and maintenance of all records sufficient and necessary to provide objective evidence of the activities affecting quality.

r) Audits, QAR-18

Establishes a system of audits to be performed in a planned and systematic manner to verify compliance and effectiveness of the Supply System Quality Assurance Program.

~~The Supply System Quality Assurance Program was in effect during the preparation of the PSAR.~~

Q. 421.016

Provide a description of how management (above or outside the QA organization) regularly assesses the scope, status, adequacy and compliance of the QA program to 10CFR50, Appendix B. These measures should include:

a. Frequent contact with program status through reports, meetings, and/or audits.

b. Performance of an annual assessment preplanned and documented. Corrective action is identified and tracked.

Response:

a. General staff meetings are held weekly by the WNP-2 Program Director. The Project QA Manager attends and quality-related topics are an agenda item. In addition, the project prepares a WNP-2 Program Director's Monthly Program Review Report which addresses quality-related topics. The Managing Director, in turn, is briefed from this report, as required, on the status of the project.

b. A formal preplanned and documented management assessment of the QA Program at WNP-2 is conducted annually. The next one is planned for the last quarter of 1981. This assessment is described in the Corporate Design and Construction QA Program, QAR-18, and includes identification and tracking of corrective action.

Q. 421.017

Provide a summary description on how responsibilities and control of quality-related activities are transferred from the principal contractors to WPPSS during the phaseout of design and construction and during preoperational testing and plant turnover.

Response:

Responsibility for and control of quality-related activities follows custody of items or systems.

Prepurchase contracts are complete and closed when the hardware and related software are delivered and accepted. The installing contractor is given control and responsibility for prepurchase hardware on delivery and retains control until turnover to the Owner (Startup).

Site contracts are complete and closed (partially or completely) at the time of system turnover. System turnover transfers complete custody and responsibility for plant systems to the Supply System Test and Startup group. Turnover constitutes Supply System acceptance of the system for testing.

At the time of turnover, open items of work or documentation are identified on a consolidated list which establishes remaining work to be tracked through project completion.

Q. 421.018

Describe the provisions which assure that the scope of the design control program includes such activities as field design engineering; physics, seismic, stress, thermal, hydraulic, radiation, and the SAR accident analyses; associated computer programs; compatibility of materials; accessibility for inservice inspection, maintenance, and repair; and quality assurance.

Response:

The scope of the design control program is detailed in Chapter III, paragraph 2.2 of the Quality Assurance Manual B&ROE-COM4-1-NP-2A, and paragraph 3.1 of the approved GE QA Program Description, NEDO-11209-04A, which have been approved by the NRC. The design activities include field design engineering, seismic, physics, stress, thermal, hydraulics, radiation, and accident analyses; compatibility of materials; use of computer codes; access for inservice inspection, repair and maintenance; quality standards; and field design activities.

Q. 421.019

Describe WPPSS' organizational responsibilities for reviewing, approving, and verifying design documents such as system descriptions, design input and criteria, design drawings, design analyses, computer programs, specifications, and procedures.

Response:

WNP-2 Supply System Engineering provides an overview of the design documents prepared by the A/E and NSSS, such as design specifications, drawings, and design criteria, to ensure that they conform to Supply System needs. This overview includes, on a selective basis, design changes. This overview is performed to help assure that the design documents conform to Federal and state regulations, industry codes and standards, and Supply System requirements.

The Supply System may review specifications and drawings and approve them for procurement and may approve design approaches.

Q. 421.020

Describe WPPSS' organizational responsibilities for (1) procurement planning; (2) the preparation, review, approval, and control of procurement documents; (3) supplier selection; (4) bid evaluations; and (5) review and concurrence of supplier QA programs prior to initiation of activities affected by the program. Describe the involvement of the QA organization in implementing these responsibilities.

Response:

The Supply System procurement process is accomplished in accord with approved procedures. Simple procurements are accomplished by purchase order from approved suppliers. Major procurements are accomplished in accord with the following:

a. Procurement planning is the responsibility of the Supply System. The Supply System, with the assistance of the A/E, Burns and Roe, and the CM, Bechtel, determines the scope and schedule for procurements. The Supply System also determines and specifies the associated quality-related requirements and actions necessary to meet our quality program commitments and assure an adequate procurement.

b. The preparation, review, approval, and control of procurement documents is primarily the responsibility of the Supply System. The A/E normally supplies the technical requirements to the Supply System, including recommendations for related commercial terms. Supply System Engineering reviews and approves the requirements. The procurement document assembled by the Supply System is also reviewed and approved by Supply System QA. The Supply System procurement organization controls and administers the procurement, including changes, in accordance with approved procedures. In a few isolated instances, the Supply System may assign contract administration to the A/E or CM.

c. Supplier selection generally originates with recommendations by the A/E. Final selection of a supplier is accomplished by the Supply System through the competitive bidding process established by the statutory procurement

requirements of the State of Washington. This considers, in addition to price, the responsiveness and responsibility characteristics of the bidding suppliers.

d. Bid evaluations are accomplished by the Supply System through a joint organizational review process which includes the A/E and Supply System QA, Engineering, Construction Management, and Procurement.

e. Review of and concurrence with supplier QA programs is accomplished by the A/E and CM organizations prior to initiation of work affected by the program. In some instances, this review may be accomplished by the Supply System. The A/E and CM QA programs are reviewed and approved by the Supply System.

In the event of a concern regarding the supplier's qualifications, including his QA program, a pre-contract award survey is conducted at the supplier's facility. In addition, QA surveillance/audits of the suppliers are specified, as required, and accomplished during the procurement to assure compliance with the QA program requirements and technical requirements.

Q. 421.021

Provide a commitment that the types of controlled documents include: documents related to computer codes; QA and QC manuals; topical reports; SAR; and nonconformance reports.

Response:

Quality Assurance and Quality Control manuals, topical reports, nonconformance reports, documents related to computer codes, and the WNP-2 Safety Analysis Report are controlled documents.

Q. 421.022

Describe the provisions which assure that the QA organization, or an individual other than the person who generated the document but qualified in quality assurance, reviews and concurs with controlled documents with regards to QA-related aspects.

Response:

Qualified and trained engineering personnel other than the person who generated the document accomplish quality-related activities such as design review and checking in accord with approved procedures. Audits and surveillances are conducted by QA personnel of drawing preparation, review, and approval activities.

Specifications, design changes, and project procedures are reviewed and concurred with by QA personnel in accord with approved procedures.

Q. 421.023

Provide a commitment that procurement of spare or replacement parts for structures, systems, and components important to safety is subject to present QA program controls, to code and standards, and to technical requirements equal to or better than the original technical requirements.

Response:

The Supply System procures spares or replacements to original or improved technical project requirements, including codes, standards and current applicable QA program controls. Replacement or new parts added into existing procurements are in accord with the codes, standards and QA program as contained in the existing procurement documents.

The Supply System has added this clarification to 17.1.1.4.*

*Draft FSAR page change attached.

Assurance Program or plan describing their policies, procedures, and systems to be utilized in the control of quality throughout the applicable phases of production, from design to final shipment, erection, or installation.

Procurement documents provide requirements for suppliers to submit or make available for review applicable documents such as drawings, specifications, procedures, instructions, inspection and test records, and quality assurance records to the Project for review and/or approval.

Procurement documents require suppliers to provide measures for retention, control, and maintenance of their Quality Assurance records. Procurement documents specify the appropriate records to be delivered to the Project prior to or with delivery.

Procurement documents require suppliers to provide right of access to their facilities, procedures, and records for inspection and audit by Project personnel. Procurement documents issued after January 1978 require the supplier to establish measures for reporting 10CFR Part 21 reportable deficiencies and disposition of nonconformances from procurement document requirements. Procurement documents require that the supplier retain the responsibility for monitoring and evaluating their sub-tier suppliers' performance to specified requirements. ~~Procurement documents for spare or replacement items are subject to requirements equivalent to those established for the original procurement.~~ Insert (A) new para.

Changes and revisions to procurement documents are subject to the same or equivalent review/approval requirements as the original document.

17.1.1.5 Instructions, Procedures and Drawings

Activities affecting quality are described in procedures, instructions, and drawings and the activities are conducted in accordance with these documents.

Procedures, instructions, and drawings include adequate quantitative and qualitative acceptance criteria to ascertain that the prescribed activities have been satisfactorily accomplished.

Procedures, instructions, and drawings are subject to review to assure that applicable codes, standards, and acceptance/rejection criteria are included.

(A) Procurement documents for spare or replacements contain original or improved Technical requirements including codes and standards and current applicable QA program requirements.

Q. 421.024

Clarify that receiving inspection is performed to assure:

a. Material, components, equipment, and acceptance records satisfy the inspection instructions prior to installation or use.

b. Specified inspection, test and other records, (such as certificates of conformance attesting that the material, components, and equipment conform to specified requirements) are available at the nuclear power plant prior to installation or use.

Response:

a. Receiving inspection of material, components, and equipment is performed in accordance with written procedures or inspection plans to assure product conformance with purchase document requirements.

Installing contractors, on their procurements, are required to identify acceptable items after determining that all receiving requirements have been accomplished. Items may not be released for installation or use until determined to be acceptable or conditionally released, as described in 17.1.1.8.

Bechtel performs receiving inspection of Owner prepurchased items in accordance with procedures. Items shall not be released to the installing contractor until determined to be acceptable or conditionally released under the requirements of the quality program.

b. Contractors are required to make provisions that all documentation and records required to substantiate quality of procured material and equipment are available at the site prior to acceptance for use or installation.

Bechtel receiving inspection of Owner prepurchased items includes a review of required quality documentation prior to release of the item for installation or use.

Q. 421.025

Describe the provisions which assure that suppliers' certificates of conformance are periodically evaluated by audits, independent inspections, or tests to assure they are valid.

Response:

Verification of the validity of supplier certificates and the effectiveness of the certification system are accomplished as an integral part of supplier control measures. The degree of verification required will depend upon the type of item or service and its safety importance. Means of verification employed may include source surveillance, source audits, document reviews, independent inspections at the time of material receipt, user tests on selected commodities, and tests after installation on selected components and systems.

Q. 421.026

Describe WPPSS' organizational responsibilities for qualification of special processes, equipment, and personnel.

Response:

The Supply System performs a procurement document review function and performs or requires an audit/surveillance function to help assure that:

a. Procurement documents require necessary qualification of processes, equipment, and personnel;

b. The requirements of the procurement documents are adequately implemented.

The A/E establishes procurement document requirements for special processes. Procedures and records are reviewed and approved by the A/E and CM.

Q. 421.027

Describe the provisions which assure that inspection results are documented, evaluated, and their acceptability determined by a responsible individual or group.

Response:

Installing contractors have developed and implemented inspection programs that meet the requirements of ANSI N45.2.0. These programs have been reviewed and evaluated by or for the Supply System. Inspection requirements are included in documentation which governs installation activities. Completed document packages are reviewed for acceptability by contractor quality groups or individuals having review responsibility, as well as by the Construction Management organization.

The Supply System Project QA organization performs audits/surveillances or inspection activities to assure compliance with established criteria.

Q. 421.028

Describe the provisions which assure that procedures provide criteria for determining the accuracy requirements of inspection and test equipment and criteria for determining when inspections or tests are required or define how and when inspections and testing activities are performed.

Response:

Inspection and testing activities to be performed are defined in inspection and test procedures or plans. The degree and amount of inspection performed on specific work items is determined from factors including similar inspection experience, criticality of the operation or part inspected and probability of rejectable conditions. Provisions are made for inspection of processed items and/or indirect control by monitoring of processing methods, equipment and personnel, as appropriate. The contract specifications generally include specific requirements defining how and when inspections and tests are to be performed. These requirements for testing and inspection are based on the Architect/Engineer-prepared specifications.

Contractors are required to establish measures to assure that inspection and test equipment are of the proper range, type, and accuracy to verify conformance to established requirements. In general, inspection and test equipment to be used is defined in inspection procedures.

Q. 421.029

Describe the provisions which assure that test procedures (Ref. p. 30) or instructions provide as required for the following:

a. Test prerequisites such as calibrated instrumentation, adequate test equipment and instrumentation including their accuracy requirements, completeness of item to be tested, suitable and controlled environmental conditions, and provisions for data collection and storage.

b. Mandatory inspection hold points for witness by Owner, contractor, or inspector (as required).

Response:

Installing contractors are required to prepare test procedures or plans that meet the requirements of ANSI N45.2.0, including provisions for necessary test prerequisites. Test procedures, as applicable, are reviewed and approved by the Architect/Engineer and Construction Management organizations.

Test procedures include mandatory inspection hold points where appropriate. The Construction Management Contractor establishes witness and holdpoints for surveillance inspection of the contractor's activities. Provisions are also included in construction contracts for establishment of Owner hold points where considered necessary.

Q. 421.030

Describe the provisions which assure that calibration of measuring and test equipment should be against standards that have an accuracy of at least four times the required accuracy of the equipment being calibrated or, when this is not possible, have an accuracy that assures the equipment being calibrated will be within required tolerance and that the basis of acceptance is documented and authorized by responsible management.

Response:

The guideline that calibration of measuring and test equipment be against standards that have an accuracy at least four times the required accuracy of the equipment being calibrated was not specifically imposed in contract specifications. Contractors' procedures are required to specify the basis of acceptance including calibration technique, calibration frequency, and allowable deviations from calibration standards (tolerances). These procedures are submitted to the Owner, or his designee, for approval.

Q. 421.031

Describe the provisions which assure that calibration standards have greater accuracy than standards being calibrated.

Response:

As noted in the response to Question 421.030, contractors are required to specify allowable deviations for both calibration standards and equipment being calibrated, and submit them for approval.

Q. 421.032

Provide a commitment that documentation identifies the nonconforming item; describes the nonconformance, the disposition of the nonconformance, and the inspection requirements; and includes signature approval of the disposition. Nonconformances are corrected or resolved prior to the pre-operational test program on the item.

Response:

The Supply System program does provide that documentation identifies the nonconforming item, describes the nonconformance, the disposition of the nonconformance, signature approval of the disposition, and completion of required inspections. This clarification has been added to 17.1.1.15.* Any nonconformances that have not been resolved at the time of turnover of the item to the Supply System for preoperational testing are identified as exceptions requiring further resolution. The nonconformance is reviewed by the Supply System for potential impact on preoperational testing and is resolved prior to testing if necessary.

*Draft FSAR page changes attached.

d. That rework or repair of nonconforming items be subject to the same, or an equal test or inspection as was originally imposed, or an approved alternate, and the inspection, testing, rework and/or repair activities are documented.

e. That nonconformance reports are reviewed for potential 10CFR50.55(e) and Part 21 reportability.

f. For identification and control of conditional released items.

g. That measures are established in procurement documents to require off-site vendors and suppliers to include their nonconformance reports, which deviate from procurement documents, as a part of their Quality Assurance records.

h. That site contractors and subcontractors document deviations from contract requirements, and nonconformances dispositioned "use-as-is" or "repair" are submitted to the project for review and/or concurrence.

Insert A new para.

Construction Management Contractor Quality Assurance is responsible for the review of these nonconformance reports to ascertain that they have been dispositioned, approved, and closed out.

Reviews include trend studies, corrective action adequacy, and reporting to appropriate levels of management.

The Architect/Engineer is responsible to provide acceptance of disposition, or when applicable, provides disposition of nonconformances.

17.1.1.16 Corrective Action

Measures are established to provide for the prompt identification, evaluation and correction of conditions adverse to quality such as nonconformances, failures, malfunctions, deficiencies, deviations, defective material, and equipment.

The Quality Assurance programs for the project organization, off-site vendors and suppliers, on-site contractors and subcontractors are required to establish provisions:

a. That corrective action is implemented in accordance with procedures.

A Nonconformance documentation identifies the non-conforming item, describes the nonconformance and the disposition of the nonconformance, identifies any special inspection requirements and the completion of inspection and contains required signatures/approvals.

Q. 421.033

Provide a commitment that audits include an objective evaluation of quality-related practices, procedures, instructions, activities and items; and review of documents and records to ensure that the QA program is effective and properly implemented.

Response:

The Supply System does include the above in its audit program and has added this clarification to 17.1.1.18.*

*Draft FSAR page changes attached.

421.33 &
421.34

d. Acceptability.

e. Action taken relative to deficiencies noted.

f. Identification with the applicable item or activity.

Suppliers, vendors, and contractors are required to furnish Quality Assurance records prior to or on delivery of equipment, supplies, structures, or systems, or retain them if required by contractual agreement.

Procedures are established and contain provisions for the identification of individuals or groups responsible for record transmittals, retention, and maintenance, and provisions for assuring that records are identifiable and retrievable.

Record storage facilities are constructed, located and secured to prevent destruction by fire, flooding, theft, and deterioration by extremes in temperature and humidity.

17.1.1.18 Audits

Measures are established to provide a system for conducting audits to verify compliance with all aspects of the Quality Assurance Program and to determine the effectiveness of the program. add B

The project organizations and principal contractors have established and implemented an audit system A. The system assures that the necessary audit functions are performed to pre-established written procedures or checklists, in a planned and systematic manner, and are conducted by trained and qualified personnel who do not have direct responsibility in the areas being audited. add A

The audit system provides for external audits to be performed, as appropriate, by the home office, project organization, and principal contractors on their suppliers, vendors, and contractors, and internal audits to be performed within each organization.

Audits are planned and scheduled on the basis of the status and safety importance of the activities being performed. They are initiated early enough and performed at regular intervals to assure the quality assurance program is effectively implemented during design, procurement, manufacture, construction, and installation.

A which includes objective evaluations of quality related practices, procedures, activities, and records.

B All aspects includes activities associated with:

a. Indoctrination and Training programs

b. Interface control between the Supply System and the principal contractors.

c. Corrective action, calibration and nonconformance control systems

d. SAR [illegible]

Audits are documented and reviewed with the level of management responsible for the area audited and, where required, follow-up action including re-audit of the deficient areas is performed.

Audit data is evaluated to assure that the QA program is effective and properly implemented and the results are reported to management for review and assessment.

The Supply System WNP-2 quality affecting activities are audited on a scheduled basis by the Supply System home office audit group.

17.1.2 THE BURNS AND ROE, INC. QUALITY ASSURANCE PROGRAM

17.1.2.1 Introduction

The Burns and Roe, Inc. (B&R) Quality Assurance Program for the Washington Public Power Supply System (WPPSS) Nuclear Project No. 2 (WNP-2) has evolved during the design and construction of WNP-2. The original B&R Quality Assurance Program (QAP) was described in the Atomic Energy Commission accepted Preliminary Safety Analysis Report (PSAR) for WNP-2, Appendix D.O. This QAP was implemented until February 1978, when WPPSS assumed responsibility for Construction Management, Site Quality Assurance and Vendor Surveillance of selected prepurchased equipment contracts. The B&R Quality Assurance Program was implemented during this phase of the WNP-2 PSAR Deviation Request No. 15 WP. In this phase, B&R was responsible for the Architect/Engineer scope of the engineering and design of WNP-2 and provided experienced Quality Assurance personnel to carry out the Supply System's assumed responsibilities. On June 1, 1981 B&R will implement their Quality Assurance Topical Report, B&ROE-COM4-1-NP-2A, approved by the Nuclear Regulatory Commission, with documented exceptions for the B&R Engineering and Design and procurement activities for WNP-2.

17.1.2.2 The B&R Quality Assurance Topical Report

The Quality Assurance Program for WNP-2 to be implemented by B&R on June 1, 1981 will be based on the B&R Quality Assurance Topical Report with documented exceptions, WNP-2 Final Safety Analysis Report (FSAR) commitments, WPPSS direction and the B&R contractural responsibilities for the design and construction of WNP-2. The B&R responsibilities for the WNP-2 Project are Engineering and Design, and procurement activities for assigned prepurchased equipment contracts. The exceptions to the Quality Assurance Topical Report are identified in the following subparagraphs.

Q. 421.034

Provide a commitment that "all aspects" (Ref. p. 40) cover activities associated with:

a. Indoctrination and training programs.

b. Interface control between WPPSS and the principal contractors.

c. Corrective action, calibration, and nonconformance control systems.

d. SAR and SSAR commitments.

Response:

The Supply System does include the above in its audit program and has added this clarification to 17.1.1.18.

See response to Question 421.033 for draft FSAR page changes.

Q. 421.035

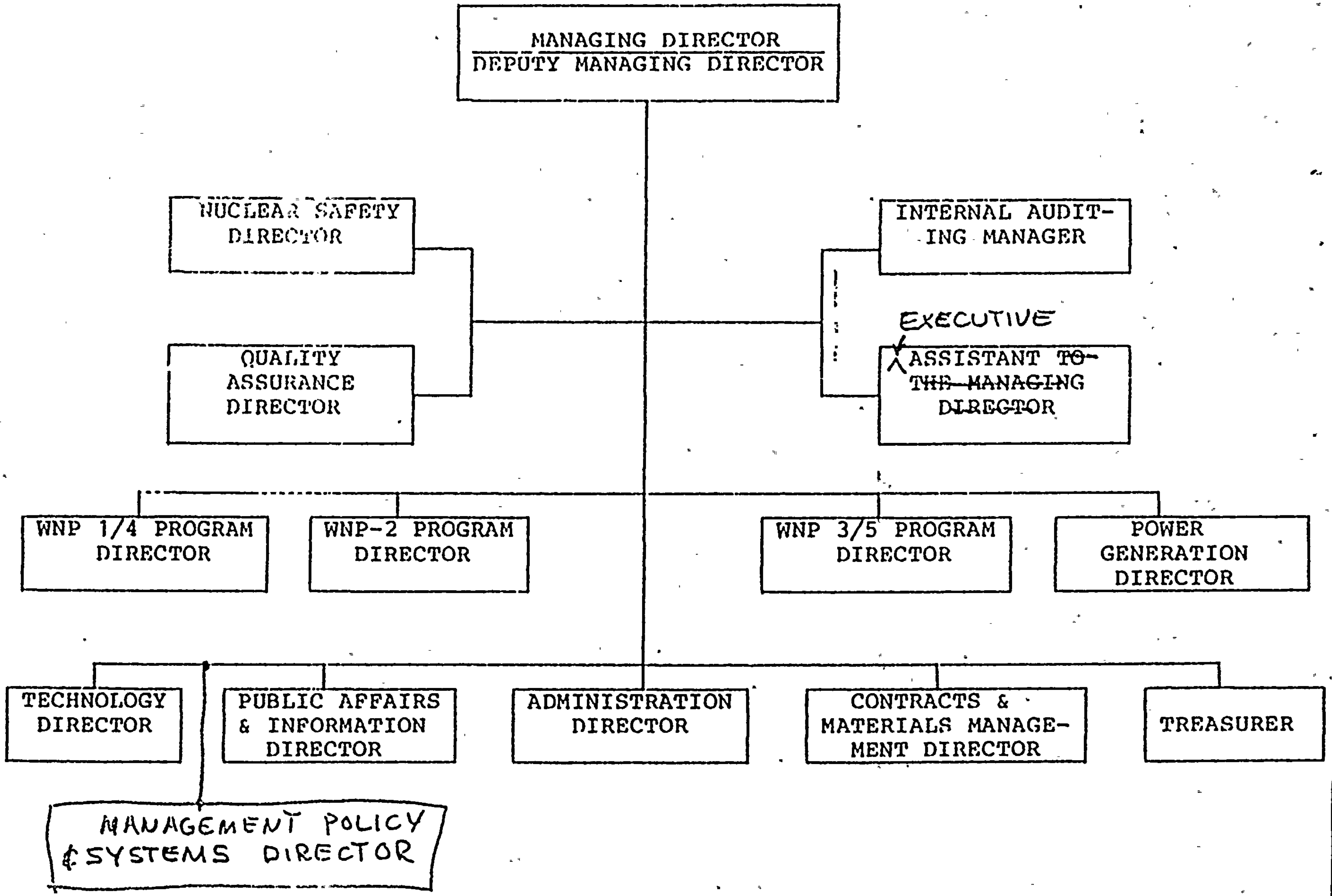
Clarify where the "home office audit group" (Ref. p. 41) is located in WPPSS' organization.

Response:

The "home office audit group" is part of the Quality Assurance Director's staff. See revised Figure 17.1-1.*

*Draft FSAR page change attached.

WASHINGTON PUBLIC POWER SUPPLY SYSTEM
NUCLEAR PROJECT NO. 2



AMENDMENT NO. 17
July 1981

SUPPLY SYSTEM ORGANIZATION CHART

FIGURE 17.1-

Q. 421.036

Describe the QA responsibilities of each of the organizational elements noted in Figure 17.1.1-4.

Response:

Figure 17.1.1-4 has been changed to Figure 17.1-4, which has been revised to reflect the reporting relationship of QA personnel in the B&R organizational structure.*

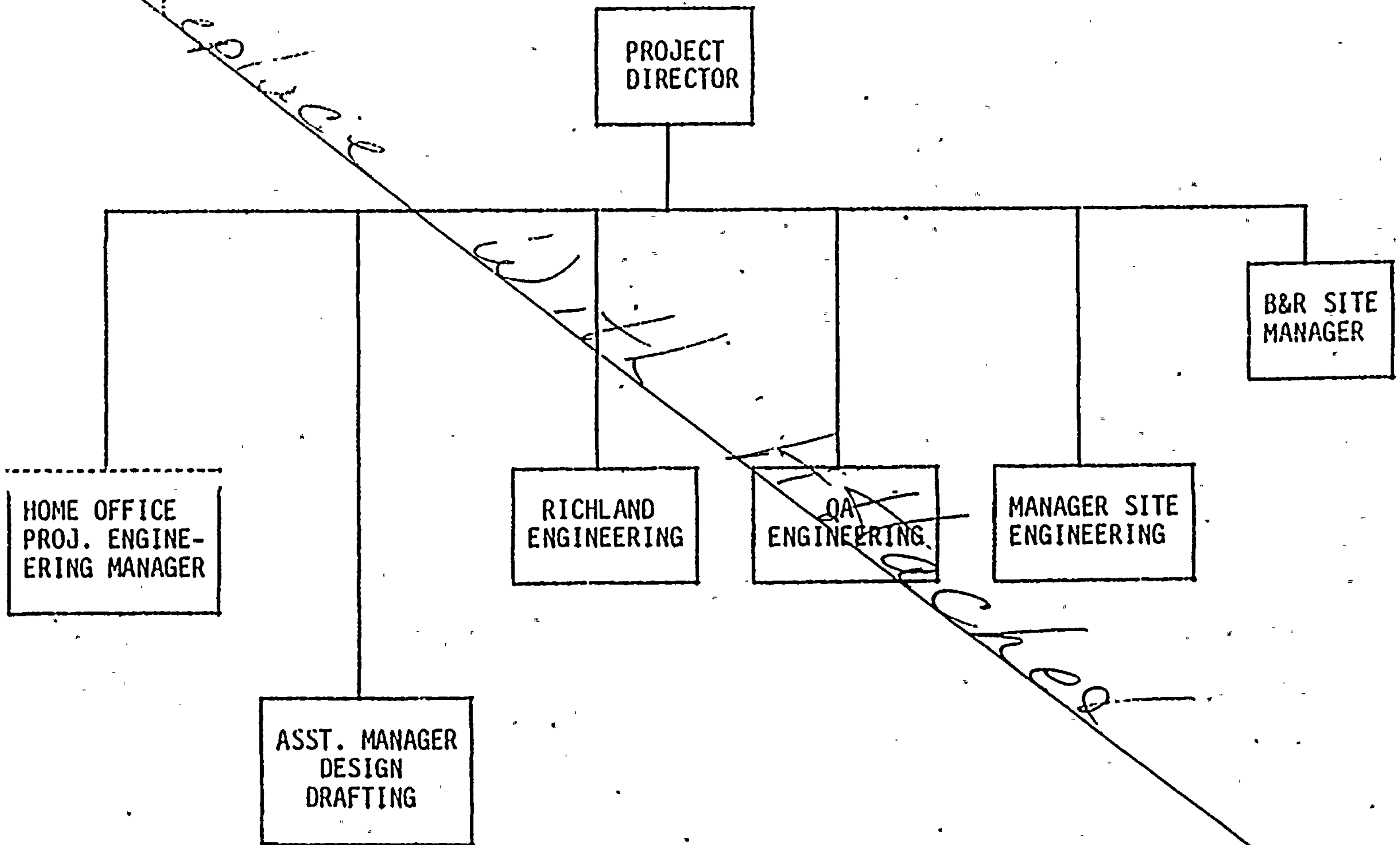
The Project Director has overall responsibility for management and direction of the B&R scope of services to WNP-2. This responsibility includes implementation of B&R's systematic management controls required for activities affecting safety systems and equipment.

Engineering and Design/Drafting Managers are responsible for implementation of mandatory B&R procedural controls applicable to their scope of safety-related engineering and drafting activities.

Richland/Site QA Engineering is responsible for audit and surveillance of the B&R safety-related functions performed at the Site and Richland offices and of subcontractors administered from these offices. Woodbury QA Engineering is responsible for audit and surveillance of safety-related functions performed in Woodbury and of contractors and subcontractors administered from Woodbury. Quality Assurance personnel report independently to B&R Corporate QA for functional authority.

*Draft FSAR page change attached.

Replace with attached



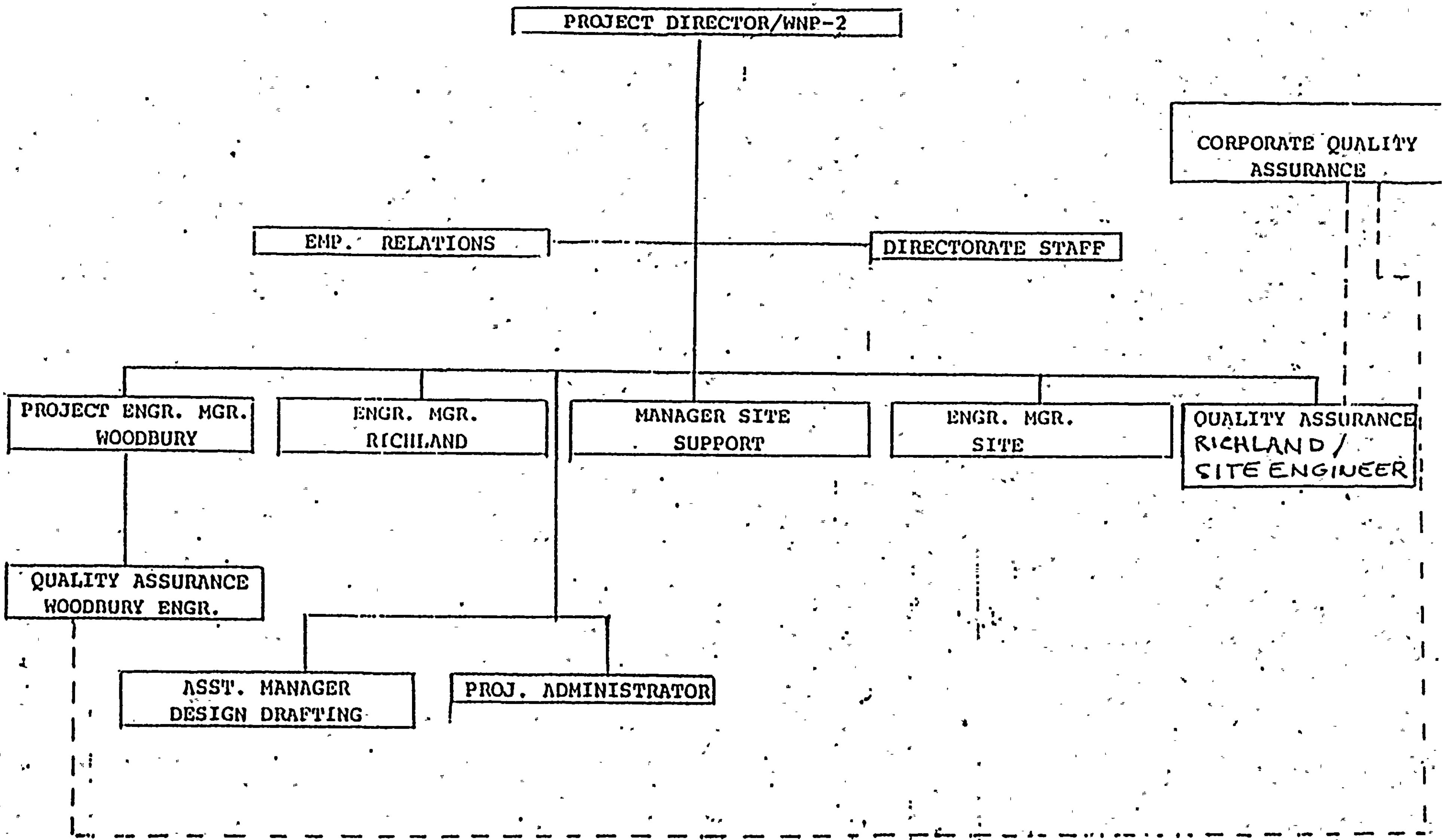
WASHINGTON PUBLIC POWER SUPPLY SYSTEM
NUCLEAR PROJECT NO. 2

BURNS AND ROE, INC.
WNP-2 ORGANIZATION CHART

FIGURE 17.1-4

AMENDMENT NO. 17
July 1981

BURNS AND ROE, INC.
WNP-2 ORGANIZATION CHART
FIGURE 17.1-4



~~Rev. Figure 17.1.1-4~~

—— admin. reporting chain
- - - - functional reporting chain

Q. 421.037

Page 4, Section 17.1.2.2 - Define the term "prepurchased equipment contracts" in the second sentence.

Response:

"Prepurchased equipment contracts" are Supply System contracts for the procurement of equipment and components which the Supply System provides to the site contractors for installation.

Q. 421.038

Provide a commitment that the Burns and Roe QA program "will follow the regulatory position of the Regulatory Guides identified in Appendix C.3 of the WNP-2 FSAR". (Ref. Question No. 14)

Response:

Burns and Roe, per paragraph 17.1.2.3.2, has committed to specific regulatory guides or alternate positions identified via Appendix C.3 of the FSAR.

Q. 421.039

Page 45, Section 7 - The purchase of spare or replacement parts shall be to the latest QA program requirements. Modify the present statement to address this position or describe an acceptable alternative.

Response:

Section 17.1.2.3.4, paragraph 7 has been changed to read:*

> "Later procurement of spare or replacement parts shall be to the original or improved technical requirements. Impositions of Quality Assurance requirements will be in accordance with the Quality Assurance requirements of the existing specification for procurement of components which are added to existing contracts. The latest WNP-2 Project Quality Programs are imposed on new procurements."

*Draft FSAR page change attached.

Paragraph 4

The appropriate commercial requirements are established by WPPSS and/or B&R and may be incorporated during the initial preparation of the technical specification. WPPSS prepares the potential bidders list.

Paragraph 5

Award is determined by WPPSS using the bid evaluation prepared by B&R.

Paragraph 6

Technical specifications are not normally conformed. When technical specifications are conformed, the changes are reviewed and approved in accordance with the same procedure used for the original technical specification.

Paragraph 7

Later procurement of spare or replacement parts shall be to the original or improved technical requirements~~. with imposition of either the original or the latest Quality Assurance requirements~~. Insert attached

17.1.2.3.5 Chapter V - Instructions, Procedures and Drawings

Paragraph 2.2

Burns and Roe review of Quality Assurance plans required by procurement documents is limited to those prepurchased contracts for which Burns and Roe performs the vendor surveillance function.

Paragraph 2.5

Burns and Roe verification of the implementation of instructions, procedures and drawing programs is limited to those prepurchased contracts for which B&R performs the vendor surveillance function.

17.1.2.3.6 Chapter VI - Document Control

Paragraph 2.1

The B&R WNP-2 Quality Assurance Program, in regard to document control, does not govern the following:

Insert to Page 17.1-23:

Impositions of Quality Assurance requirements will be in accordance with the Quality Assurance requirements of the existing specification for procurement of components which are added to existing contracts. The latest WNP-2 Project Quality Programs are imposed on new procurements.

Q. 421.040

Identify the organizational element that performs receipt inspection of items on "prepurchased equipment contracts" which are the responsibility of Burns & Roe.

Response:

Prior to July 1981, receipt inspection of items on "prepurchased equipment contracts" was performed by the contractor having the installation responsibility. Since July 1981, receipt inspection of prepurchased equipment is performed by the Construction Management contractor.

Q. 421.041

Section 17.1.3 - General Electric's current activities related to WNP-2 should be in accordance with NEDO-11209-04A, Revision 2, dated February 1, 1980. In addition, General Electric should update their commitment to the following Regulatory Guides or describe acceptable alternatives: 1.28-Rev. 2; 1.58-Rev. 1; 1.144-Rev. 1; and 1.146.

Response:

The General Electric Nuclear Energy Business Group (NEBG) provides a BWR Quality Assurance (QA) program as documented in NEDO-11209-04A, Revision 2, October 1980. This QA program is structured to comply with the NEBG commitments to the quality-related regulatory guides and has been approved by NRC in a letter dated September 29, 1980.

In this letter, NRC states that should regulatory criteria or regulations change such that their conclusions about the NEBG QA program become invalidated, they will notify GE. For this reason, the QA program provides for periodic modification and/or updating of NEBG commitments to comply with quality-related regulatory guides relating to the NEBG scope of supply. The NEBG commitments to comply with regulatory positions, or NRC approved alternate positions to quality related regulatory guides are then incorporated into the BWR QA program documentation.

As approved by NRC, the NEBG commitment to Regulatory Guide 1.28 is to Rev. 0 (June 1972). Regulatory Guide 1.144 has not been committed to by NEBG. The next revision of NEDO-11209-04A, will include the NEBG commitments to Regulatory Guides 1.58, Rev. 1, and Regulatory Guide 1.146; these commitments have been verbally approved by NRC.

*Draft FSAR page change(s) attached.

Paragraph 2.5

Not applicable to the B&R WNP-2 Quality Assurance Program.

17.1.2.3.16 Chapter XVI - Corrective Action

No deviations.

17.1.2.3.17 Chapter XVII - Quality Assurance Records

No deviations.

17.1.2.3.18 Chapter XVIII - Audits

Paragraph 2.10

Not applicable to B&R WNP-2 Quality Assurance Program.

Paragraph 2.11

The audit program on material and equipment suppliers applies only to those prepurchased contracts for which B& R performs the vendor surveillance function.

17.1.3 GENERAL ELECTRIC COMPANY QUALITY ASSURANCE PROGRAM

The applicable Quality Assurance Program (QAP) and detailed procedures for the WNP-2 nuclear steam supply system (NSSS) and fuel have evolved during the design and construction phases of the WNP-2 plant. The original General Electric (GE) program for WNP-2 was implemented in 1968 and is described in the Preliminary Safety Analysis Report (PSAR), Appendix D. The program at that time was in accordance with the Nuclear Energy Division (NED) quality objectives for safety and reliable systems and components as set forth in the "Blue Book" issued August 20, 1968. On October 1, 1969, the "Blue Book" was replaced with the "Green Book", Revision 0, which incorporated the intent of the then "Proposed Atomic Energy Commission (AEC) Quality Assurance (QA) Criteria." The "Green Book" has proceeded through several revisions since 1969. The latest revision is NEDO-11209-04A, dated ~~March 1978~~ October 1980. Table 17.1-1 is a matrix showing the entire evolutionary process which the GE program has undergone since August 1968 and identifies related NRC and industry standards that were applied. The actual version in effect at any point in time controlled the QA measures applied to WNP-2 by GE for work when it was initiated, consistent with any necessary contractual adjustments to update from the 1970 base date of the contract with the Washington Public Power Supply System. For example, ~~any~~

TABLE 17.1-1

GENERAL ELECTRIC QUALITY ASSURANCE EVOLUTIONARY PROCESS

Date of Effectiveness	NED Quality Objectives - Safe & Reliable Systems & Components	Intent of Proposed AEC QA Criteria	Intent of 10CFR50 Appendix B (proposed)	10CFR50 Appendix B	ANSI N45.2	AEC Reg. Guide 1.28	ASME B&P Code	QA Related Reg. Guide & ANSI Stds.
6/20/68	Blue Book							
10/1/69	Green Book Rev. 0	x						
5/1/70	Green Book Rev. 1	x						
9/15/71	Green Book Rev. 2		x					
6/1/72	Green Book Rev. 3			x	x			
3/1/73	Green Book Rev. 4 (NEDO 11209)			x	x			
5/7/74	Green Book Rev. 5 (NEDO 11209-01)			x	x	x	x	x
12/12/75	Green Book (NEDO 11209-02)			x	x	x	x	x
11/76	Green Book (NEDO 11209-03A)			x	x	x	x	x
3/31/78	Green Book (NEDO 11209-04A)			x	x	x	x	x
10/80	Green Book (NEDO 11209-04A)			X	X	X	X	X

Q. 421.042

Section 17.1.4.3 - Bechtel should update their commitment to the following Regulatory Guides or describe acceptable alternatives: 1.28-Rev. 2; 1.39-Rev. 2; 1.123-Rev. 1; and 1.144-Rev. 1.

Response:

Bechtel's regulatory Guide positions meet project and Supply System commitments in Appendix C.3. Bechtel will address Regulatory Guide 1.144-Rev. 1 in conjunction with the Supply System.

See response to Question 421.014.

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Section 17.1.2.2 of the standard format (Regulatory Guide 1.70) requires the identification of safety-related structures, systems, and components controlled by the quality assurance program. You are requested to supplement and clarify the WPPSS-2 list in Table 3.2-1 of the FSAR in accordance with the following:

a. The following items do not appear in Table 3.2-1 of the FSAR. Add the appropriate items to Table 3.2-1 and provide a commitment that the remaining items are subject to the pertinent requirements of the FSAR operational quality assurance program or justify not doing so.

1. Biological shielding within containment vessel, reactor building, and control building.

2. Missile barriers within containment vessels, reactor building, control building, diesel-generator building, and standby service water pump houses.

3. Spent fuel pool and liner.

4. Equipment and drain floor piping and containment isolation valves.

5. Quencher and quencher support.

6. Downcomers and braces.

7. Containment spray system.

8. Condensate and feedwater system piping from PRV to the outermost isolation valves and the containment isolation valves.

9. Primary containment access hatches/locks/doors, penetration assemblies, and vacuum relief valves.

10. Engineering safety features actuation system.

11. Combustible gas control system hydrogen recombiners.

12. Instrumentation & controls associated with:

    a) ADS (cf. Table 7.3-21)
    b) LPCI (cf. Table 7.3-4)
    c) MSIV-LCS
    d) Primary containment vacuum relief system

e) Standby gas treatment system
f) Reactor building recirculation system
g) Reactor building isolation and HVAC support system
h) Habitability systems, control room isolation, and supporting HVAC systems
i) ESF auxiliary support systems:

   1) RHR service water
   2) Containment instrument gas

j) HVAC for ESF systems:

   1) SGTS equipment room
   2) Diesel generator building
   3) ESSW pumphouse
   4) ESF switchgear room
   5) ECCS unit coolers
   6) Drywell unit coolers
   7) Control structure chilled water system

k) Reactor core isolation cooling remote shutdown panel
l) Safety-related display (NSSS and non-NSSS)
m) Refueling interlock system
n) Rod block monitor system
o) Rod sequence control system
p) Rod worth minimizer
q) Diesel generator initiation (NSSS and non-NSSS)

Note: In lieu of adding a through q above to Table 3.2-1, it would be acceptable to add an item 50, "Instrumentation and Control Equipment", with a sub-1, "Safety-Related Instrument and Control Systems", with a comment 38, "Safety-related instrumentation and control systems and components are identified in detail in Chapter 7, Table 7.1-1 of the FSAR. The pertinent quality assurance requirements of Section 17.2 of the FSAR will apply to these systems and components."

13. Onsite ac power systems (Class 1E)

   a) Diesel generator packages including auxiliaries (e.g., lube system, jacket cooling, air start system, governor, voltage regulator, excitation system)
   b) 4160 volt switchgear

c) 480V load centers
d) 480V motor control centers
e) Instrumentation, control, and power cables (including underground cable system, cable splices, connectors, and terminal blocks).
f) Conduit and cable trays and their supports:

Raceway installations containing Class 1E cables and other raceway installations required to meet Seismic Category 1 requirements (those whose failure during a seismic event may result in damage to any Class 1E or other safety-related system or components).

g) Transformers
h) Valve operators
i) Protective relays and control panels
j) AC control power inverters
k) Containment electrical penetration assemblies
l) Other cable penetrations (fire stops)

14. Onsite dc power systems (Class 1E)

a) 24, 125, and 250 volt DC distribution equipment
b) Conduit and cable trays and their supports:

Raceway installations containing Class 1E cables and other raceway installations required to meet Seismic Category 1 requirements (those whose failure during a seismic event may result in damage to any Class 1E or other safety-related system or components).

c) Battery racks
d) Protective relays and control panels

15. Radiation monitoring (fixed and portable).

16. Radioactivity monitoring (fixed and portable).

17. Radioactivity sampling (air, surfaces, liquids).

18. Radioactive contamination measurement and analysis.

19. Personnel monitoring internal (e.g., whole body counter) and external (e.g., TLD system)

20. Instrument storage, calibration, and maintenance.

21. Decontamination (facilities, personnel, and equipment).

22. Respiratory protection, including testing.

23. Contamination control.

24. Radiation shielding.

25. Meteorological data collection programs.

26. Expendable and consumable items necessary for the functional performance of safety-related structures, systems, and components (i.e., weld rod, fuel oil, boric acid, snubber oil, etc.).

27. Measuring and test equipment used for safety-related structures, systems, and components.

28. Safety-related masonry walls (see IE Bulletin 80-11).

29. Class 1E electrical duct banks.

30. Buried essential service water pipe line.

b. The following items for Table 3.2-1 need expansion and/or clarification as noted. Review the list as indicated or justify not doing so.

1. The heat exchangers, pumps, interconnecting piping, and valves associated with item 21, the fuel pool cooling and cleanup system, should be under the pertinent controls of the FSAR operational quality assurance program.

2. Reactor vessel internals (e.g., dryers, separators, feedwater spargers, jet pump instrumentation, etc.) associated with item 1.6 should be under the pertinent controls of the FSAR operational quality assurance program.

c. Enclosure 2 of NUREG-0730, "Clarification of TMI Action Plant Requirements" (November 1980) identified numerous items that are safety-related and appropriate for OL application and therefore should be in Table 3.2-1. These items are listed below. Add the appropriate items to Table 3.2-1 and provide a commitment that the remaining items are subject to the pertinent requirements of the FSAR operational QA program or justify not doing so.

		NUREG-0737 (Enclosure 2) Clarification Item
1.	Plant safety parameter display console.	I.D.2
2.	Reactor coolant system vents.	II.B.1
3.	Plant shielding.	II.B.2
4.	Post-accident sampling capability.	II.B.3
5.	Valve position indication.	II.D.3
6.	Dedicated hydrogen penetrations.	II.E.4.1
7.	Containment isolation dependability.	II.E.4.2
8.	Accident monitoring instrumentation.	II.F.1
9.	Instrumentation for detection of inadequate core cooling.	II.F.2
10.	HPCI & RCIC initiation levels.	II.K.3.13
11.	Isolation of HPCI & RCIC	II.K.3.15
12.	Challenges to and failure of relief valves.	II.K.3.16
13.	ADS actuation.	II.K.3.18
14.	Restart of core spray and LPCI.	II.K.3.21
15.	RCIC suction.	II.K.3.22
16.	Space cooling for HPCI & RCIC.	II.K.3.24
17.	Power on pump seals.	II.K.3.25
18.	Common reference level.	II.K.3.27
19.	ADS valve, accumulators, and associated equipment and instrumentation.	II.K.3.28

20.	Emergency plans.	III.A.1.1/ III.A.2
21.	Emergency support facilities.	III.A.1.2
22.	In-plant I_2 radiation monitoring.	III.D.3.3
23.	Control room habitability.	III.D.3.4

Response:

Table 3.2-1 will be modified prior to fuel load to add and identify the quality class of each generic item listed in the question and not already included in the table. Work performed during the operating phase, including modification, maintenance, calibration, and testing, will be performed under the applicable requirements of the Operational Quality Assurance Program.