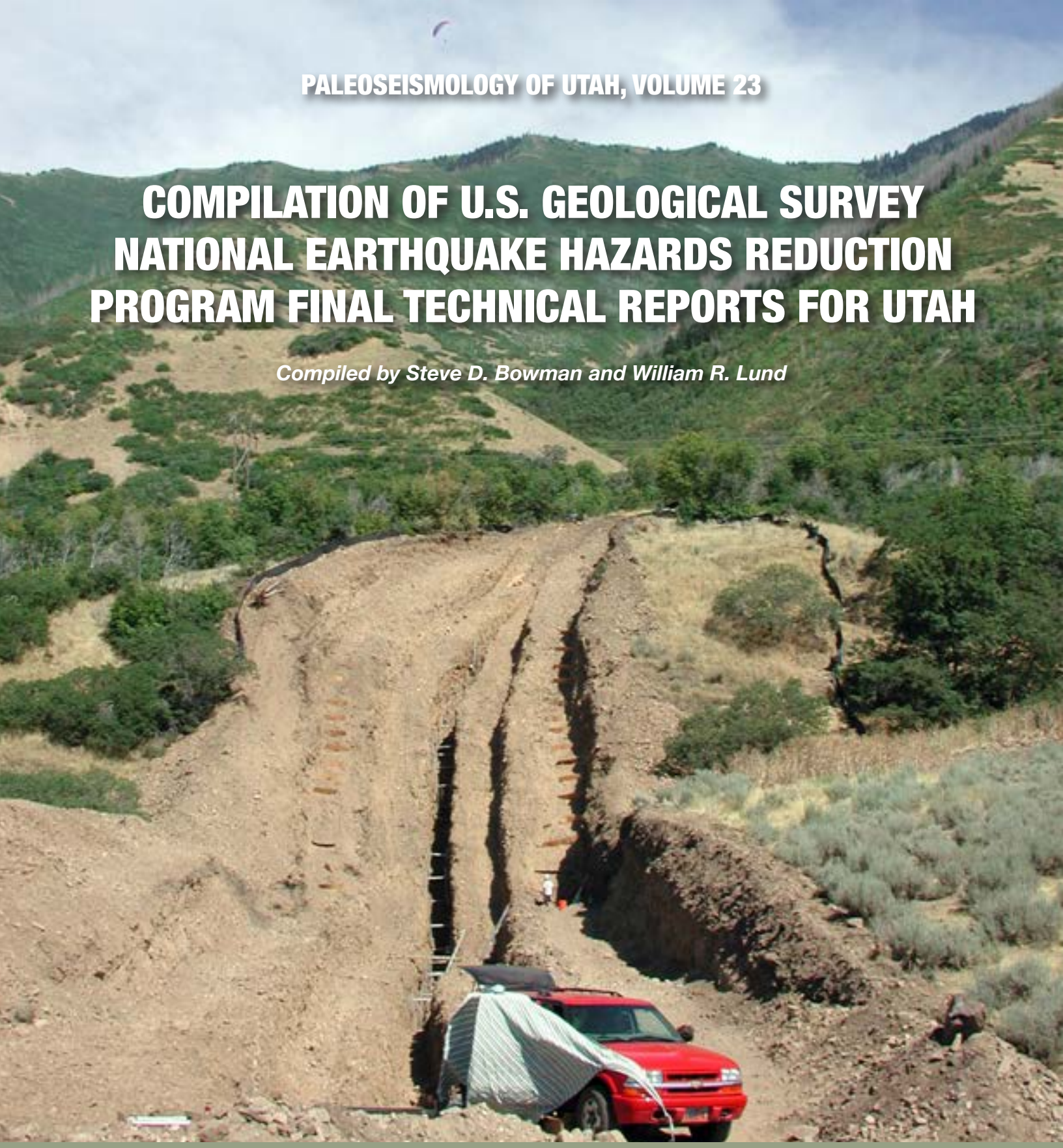
PALEOSEISMOLOGY OF UTAH, VOLUME 23

COMPILATION OF U.S. GEOLOGICAL SURVEY NATIONAL EARTHQUAKE HAZARDS REDUCTION PROGRAM FINAL TECHNICAL REPORTS FOR UTAH

Compiled by Steve D. Bowman and William R. Lund



MISCELLANEOUS PUBLICATION 13-3
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2013

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Cover photo: Mapleton megatrench paleoseismic investigation site on the Provo segment of the Wasatch fault zone. The trench was 105 m long, 11.5 m deep, and exposed over 33 m of vertical relief on a fault that is 19 to 23 m high. Photo by Susan Olig.

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FOREWORD

This Utah Geological Survey Miscellaneous Publication, *Compilation of U.S. Geological Survey National Earthquake Hazards Reduction Program Final Technical Reports for Utah*, is the twenty-third report in the Paleoseismology of Utah series. This series makes the results of paleoseismic investigations in Utah available to geoscientists, engineers, planners, public officials, and the general public. These studies provide critical information regarding paleoearthquake and fault parameters such as earthquake timing, recurrence, displacement, slip rate, fault geometry, and segmentation, which can be used to characterize potential seismic sources and evaluate the long-term seismic hazard of Utah's Quaternary faults.

This compilation includes 20 reports pertaining to U.S. Geological Survey (USGS)-funded National Earthquake Hazards Reduction Program (NEHRP) paleoseismic investigations conducted between 1978 and 2012, one report that predates the NEHRP program, and 36 annual to semi-annual *Summaries of Technical Reports* authored by funded NEHRP investigators. These reports contain information on some of the first paleoseismic investigations conducted on the Wasatch fault zone. Original authors made few copies of these reports, and many are very difficult to locate. This publication makes these otherwise hard-to-find legacy reports easily accessible to scientists, government policy makers, and the general public.

Determining the paleoseismic parameters for Utah's Quaternary faults is important because those data help refine fault activity and hazard models and improve earthquake-hazard evaluations for the region, all of which help reduce Utah's earthquake-related risk.

William R. Lund, Editor
Paleoseismology of Utah Series

PALEOSEISMOLOGY OF UTAH, VOLUME 23

COMPILATION OF U.S. GEOLOGICAL SURVEY NATIONAL EARTHQUAKE HAZARDS REDUCTION PROGRAM FINAL TECHNICAL REPORTS FOR UTAH

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SUMMARY

As part of the Paleoseismology of Utah series, the Utah Geological Survey (UGS) has acquired, scanned, and released in digital format previously hard-to-access "legacy" reports of paleoseismic fault investigations conducted in Utah. This compilation includes 20 reports pertaining to U.S. Geological Survey (USGS)-funded National Earthquake Hazards Reduction Program (NEHRP) paleoseismic investigations conducted between 1978 and 2012, one report that predates the NEHRP program, and 36 annual to semi-annual *Summaries of Technical Reports* authored by funded NEHRP investigators. These reports contain information on some of the first paleoseismic investigations conducted on the Wasatch fault zone. Original authors made few copies of these reports, and many are very difficult to locate. In chronological order, the Final Technical Reports (FTR) in this compilation include the following:

- Woodward-Clyde Consultants, 1975, Study of earthquake recurrence intervals on the Wasatch fault, Utah—Final Technical Report, 1975: Woodward-Clyde Consultants, unpublished consultant's report for the U.S. Geological Survey, contract no. 14-08-0001-14567, variously paginated. (While this document predates the NEHRP program that started in 1977, we have included it for project completeness.)

- Swan, F.H., III, Schwartz, D.P., Hanson, K.L., Knuepfer, P.L., and Cluff, L.S., 1978, Study of earthquake recurrence intervals on the Wasatch fault, Utah, semi-annual technical report, September, 1978: Woodward-Clyde Consultants, unpublished consultant's report for the U.S. Geological Survey, contract no. 14-08-0001-16827, variously paginated.
  ◊ Subsequently published by the USGS as Swan, F.H., III, Schwartz, D.P., Hanson, K.L., Knuepfer, P.L., and Cluff, L.S., 1981b, Study of earthquake recurrence intervals on the Wasatch fault at the Kaysville site, Utah: U.S. Geological Survey Open-File Report 81-228, 54 p., available online at http://pubs.usgs.gov/of/1981/0228/report.pdf.

- Swan, F.H., III, Schwartz, D.P., Cluff, L.S., Hanson, K.L., and Knuepfer, P.L., 1979a, Study of earthquake recurrence intervals on the Wasatch fault, Utah, second semi-annual technical report, March, 1979: Woodward-Clyde Consultants, unpublished consultant's report for the U.S. Geological Survey, contract no. 14-08-0001-16827, variously paginated.
  ◊ Subsequently published by the USGS as Swan, F.H., III, Schwartz, D.P., Cluff, L.S., Hanson, K.L., and Knuepfer, P.L., 1981a, Study of earthquake recurrence intervals on the Wasatch fault at the Hobble Creek site, Utah: U.S. Geological Survey Open-File Report 81-229, 59 p., available online at http://pubs.usgs.gov/of/1981/0229/report.pdf.

- Swan, F.H., III, Schwartz, D.P., Cluff, L.S., Hanson, K.L., and Knuepfer, P.L., 1979b, Study of earthquake recurrence intervals on the Wasatch fault, Utah, third semi-annual technical report, October,

1979: Woodward-Clyde Consultants, unpublished consultant's report for the U.S. Geological Survey, contract no. 14-08-0001-16827, variously paginated.

- Swan, F.H., III, Hanson, K.L., Schwartz, D.P., and Knuepfer, P.L., 1980, Study of earthquake recurrence intervals on the Wasatch fault, Utah, fourth semi-annual technical report, July, 1980: Woodward-Clyde Consultants, unpublished consultant's report for the U.S. Geological Survey, contract no. 14-08-0001-16827, variously paginated.
  - ◊ Subsequently published by the USGS as Swan, F.H., III, Hanson, K.L., Schwartz, D.P., and Knuepfer, P.L., 1981c, Study of earthquake recurrence intervals on the Wasatch fault, Utah: U.S. Geological Survey Open-File Report 81-450, 53 p., available online at http://pubs.usgs.gov/of/1981/0450/report.pdf.
- Hanson, K.L., Swan, F.H., III, and Schwartz, D.P., 1981, Study of earthquake recurrence intervals on the Wasatch fault, Utah, sixth semi-annual technical report, July 1981: Woodward-Clyde Consultants, unpublished consultant's report for the U.S. Geological Survey, contract no. 14-08-0001-19115, variously paginated.
- Hanson, K.L., Swan, F.H., III, and Schwartz, D.P., 1982, Study of recurrence intervals on the Wasatch fault, Utah, seventh semi-annual technical report, May 12, 1982: Woodward-Clyde Consultants, unpublished consultant's report for the U.S. Geological Survey, contract no. 14-08-0001-19842, variously paginated.
- Swan, F.H., III, Hanson, K.L., Schwartz, D.P., and Black, J.H., 1983, Study of earthquake recurrence intervals on the Wasatch fault, Utah, eighth semi-annual technical report, May, 1983: Woodward-Clyde Consultants, unpublished consultant's report for the U.S. Geological Survey, contract no. 14-08-0001-19842, variously paginated.
- McCalpin, J.P., 1985, Quaternary fault history and earthquake potential of the Hansel Valley area, north-central Utah— Final Technical Report: Utah State University, unpublished contract deliverable report for the U.S. Geological Survey, contract no. 14-08-001-21899, 37 p., 2 plates.
- Olig, S.S., Gorton, A.E., and Chadwell, L., 1999, Mapping and Quaternary fault scarp analysis of the Mercur and West Eagle Hill faults, Wasatch Front, Utah: URS Greiner Woodward Clyde, unpublished consultant's Final Technical Report to the U.S. Geological Survey, contract no. 1434-HQ-97-GR-03154, variously paginated.
- Pearthree, P.A., Lund, W.R., Stenner, H.D., and Everitt, B.L., 1999, Paleoseismic investigations of the Hurricane fault in southwestern Utah and northwestern Arizona—Final Project Report: Arizona Geological Survey, unpublished Final Technical Report to the U.S. Geological Survey, contract no. 1434-HQ-97-GR-03047, 127 p. (Original FTR report not available; however, reproduction reformatted by Pearthree in 2012.)
  - ◊ Subsequently published by the Arizona Geological Survey as Stenner, H.D., Lund, W.R., Pearthree, P.A., and Everitt, B.L., 1999, Paleoseismic investigations of the Hurricane fault in northwestern Arizona and southwestern Utah: Arizona Geological Survey Open-File Report 99-8, 137 p., reformatted and revised May, 2005, available online at http://repository.azgs.az.gov/sites/default/files/dlio/files/2010/u14/OFR99-8Hurricanefault.pdf and http://repository.azgs.az.gov/sites/default/files/dlio/files/nid205/ofr99-8_fig3-8_q2_trench_log2.pdf.
- Pechmann, J.C., and Dinter, D.A., 1999, Paleoseismology of the East Great Salt Lake fault: University of Utah Department of Geology & Geophysics, unpublished Final Technical Report to the U.S. Geological Survey, contract no. 98HQGR1013, 10 p.
- McCalpin, J.P., 2000, Long recurrence records from the Wasatch fault zone, Utah: GEO-HAZ Consulting, Inc., unpublished consultant's Final Technical Report for the U.S. Geological Survey, contract no. 99HQGR0058, 61 p.
- Olig, S.S., Gorton, A.E., Black, B.D., and Forman, S.L., 2001, Paleoseismology of the Mercur fault and segmentation of the Oquirrh-East Great Salt Lake fault zone, Utah: URS Corporation, unpublished consultant's Final Technical Report for the U.S. Geological Survey, contract no. 98HQGR1036, variously paginated.
- Olig, S.S., McDonald, G., Black, B.D., DuRoss, C.B., Lund, W.R., Hylland, M., Simon, D.B., Giraud, R.E., and Christenson, G.E., 2011, Extending the paleoseismic record of the Provo segment of the Wasatch fault zone, Utah: URS Corporation, unpublished consultant's report for the U.S. Geological Survey, contract no. 02HQGR0109, variously paginated.
- Evans, J.P., and McCalpin, J.P., 2012, Determination of paleoearthquake timing and magnitude on the southern segment of the East Cache fault, Utah: Utah State University, unpublished contract deliverable report for the U.S. Geological Survey, contract no. 07HQGR0079, 54 p.

After contacting the USGS and the researchers who worked on the investigation, querying public library databases, and conducting various Internet-based searches, we were unable to locate one FTR report. That report is:

- Hanson, K.L., Swan, F.H., III, and Schwartz, D.P., 1981, Study of earthquake recurrence intervals on the Wasatch fault, Utah, fifth semi-annual technical report: Woodward-Clyde Consultants, unpublished consultant's report for the U.S. Geological Survey, contract no. 14-08-001-19115, 21 p.

We suggest that readers also refer to UGS Open-File Report (OFR) 548 that contains a compilation of three consultant's fault investigation reports and low-sun-angle aerial photography of the Wasatch fault and is available online at http://geology.utah.gov/online/aerial_photos/aerial_compilations.htm. The UGS plans to update and re-release OFR-548 in the Paleoseismology of Utah series in 2013. The reports in the compilation include:

- Cluff, L., Brogan, G., and Glass, C., 1970, Wasatch fault, northern portion, earthquake fault investigation & evaluation, a guide to land use planning: Woodward-Clyde & Associates, unpublished consultant's report for the Utah Geological and Mineralogical Survey, variously paginated.

- Cluff, L., Brogan, G., and Glass, C., 1973, Wasatch fault, southern portion, earthquake fault investigation & evaluation, a guide to land use planning: Woodward-Lundgren & Associates, unpublished consultant's report for the Utah Geological and Mineralogical Survey, variously paginated.

- Cluff, L., Glass, C., and Brogan, G., 1974, Investigation and evaluation of the Wasatch fault north of Brigham City and Cache Valley faults, Utah and Idaho; a guide to land-use planning with recommendations for seismic safety: Woodward-Lundgren & Associates, unpublished consultant's report for the U.S. Geological Survey, variously paginated.

Table 1 lists the FTR reports in this compilation and their relation to other UGS paleoseismology publications by fault, segment, or section name. We scanned these reports and accompanying plates to create text-searchable PDF files when original digital files were not available. Where digital files exist, text-searchable PDF files were created directly from them. The PDF files are named by author and publication date (e.g., Woodward-Clyde Consultants, 1975.pdf) as shown in table 2. Table 2 also indicates the availability of any subsequently published reports (such as Open-File Reports), and USGS contract number. Due to the age of many of these reports, small marks and other imperfections may be present. We have attempted to clean and remove these marks to the extent possible to create high-quality digital files of the reports. Where available, we have included the NEHRP summary document following the FTR report in the same PDF file. Bookmarks showing major sections, plates, figures, appendices, and report summaries are available as appropriate in each PDF file. All of the included FTR reports are also contained in a single PDF file with index (FTR_Reports.pdf). Due to the size of this PDF file (~241 MB), some users may have difficulty opening this file and should use the individual FTR report PDF files. PDF files may be viewed using the free Adobe Reader software (version 10 or greater). The latest version of the software may be downloaded from http://get.adobe.com/reader/.

Various consulting companies and university researchers created these FTR reports as part of NEHRP-funded paleoseismic investigations in Utah. These reports were performed at various levels of detail depending upon the project, but generally include descriptions of regional and local geology, and details of the paleoseismic investigations conducted (geologic mapping, geomorphic evaluations, photogeologic evaluations, trenching, and geochronologic dating).

This compilation presents the first paleoseismic information generated for many of Utah's Quaternary faults, and while some of the data contained here may have been superseded by subsequent investigations, for several faults these reports remain the only available paleoseismic information. In addition to being a valuable historical archive, this compilation will be useful for professionals and governmental agencies involved with current paleoseismic investigations; other geological, geotechnical, and environmental investigations; and land-use planning efforts.

This compilation also includes 36 annual to semi-annual *Summaries of Technical Reports* that the USGS published between 1976 and 1995. Individual summaries in each volume were authored by the funded NEHRP investigators. The USGS published volumes IX (9) to XXXVI (36) as Open-File Reports. Table 3 is a list of the 36 published *Summaries of Technical Reports* volumes. We have scanned report volumes I (1) to XVIII (18) to text-searchable PDF format, and have included PDF files of volumes XIX (19) to XXXVI (36) available from the USGS website. We have named the PDF files by the summary report volume number (e.g., USGS STR V1.pdf) as shown in table 3. Due to the age of many of these reports, small marks and other imperfections may be present. The USGS discontinued publishing *Summaries of Technical Reports* with volume XXXVI (36) in 1995, and began online availability of FTR reports in 2000, which are available at http://earthquake.usgs.gov/research/external/research.php. All of the included *Summaries of Technical Reports* are also contained in a single PDF file with index (Summary_Reports.pdf). Due to the size of this PDF file (~927 MB), some users may have difficulty opening this file and should use the individual volume PDF files.

Table 1. Summary of U.S. Geological Survey National Earthquake Hazards Reduction Program Final Technical Reports (FTR) for Utah included in this compilation and their relation to other UGS paleoseismology publications.

Fault, Segment, or Section Name[1]	FTR Report in This Compilation	Paleoseismology of Utah Series No.[2]	UGS Publication[3]
Bear Lake fault zone			
Eastern and western faults, Utah and Idaho	--	12	MP 03-4
Bear River fault zone			
All segments	--	4	SS 82
East Cache fault zone			
All segments	--	5 --[4]	SS 83 OFR 548
East Cache fault	Swan and others, 1983	23	--
Southern segment	Evans and McCalpin, 2012	23	--
West Cache fault zone			
All segments	--	9 --[4]	SS 98 OFR 548
Hansel Valley area			
Hansel Valley, North Promontory, and Hansel Mountain faults	McCalpin, 1985	23	--
Hurricane fault zone			
All sections	Pearthree and others, 1999	23	--
	--	14	SS 119
	--	21	OFR 583
Oquirrh – Great Salt Lake fault zone			
Mercur, West Eagle Hill, Soldier Canyon, and Lakes of Kilarney faults	Olig and others, 1999	23	--
Mercur fault	Olig and others, 2001	23	--
Oquirrh fault	--	6	SS 88
East Great Salt Lake fault	Pechmann and Dinter, 1999	23	--
Sevier/Toroweap fault zone			
All sections	--	16	SS 122
Wasatch fault zone			
All segments	Woodward-Clyde Consultants, 1975	23	--
	--	--[4]	OFR 548
Brigham City segment	--	2	SS 76
	--	11	MP 02-9
	--	22	SS 142
Clarkston Mountain segment	--	15	SS 121
Collinston segment	--	15	SS 121
Levan segment	--	3	SS 78
Nephi segment	Hanson and others, 1981	23	--
	Hanson and others, 1982	23	--
	--	3	SS 78
	--	17	SS 124

Table 1. continued

Provo segment	Swan and others, 1979a	23	--
	Swan and others, 1979b	23	--
	Olig and others, 2011	23	--
	--	1	SS 75
	--	8	SS 93
Salt Lake City segment	Swan and others, 1979b	23	--
	Swan and others, 1980	23	--
	Hanson and others, 1982	23	--
	McCalpin, 2000	23	--
	--	7	SS 92
	--	10	MP 02-7
Weber segment	Swan and others, 1978	23	--
	Swan and others, 1979b	23	--
	--	13	MP 05-8
	--	18	SS 130
Washington fault zone			
Northern section	--	21	OFR 583
West Valley fault zone			
Granger and Taylorsville faults	--	--[5]	CR 93-7
	--	--[5]	CR 93-8
Other Faults or Areas			
East and Main Canyon faults	--	19	MP 10-5
Absaroka and Darby-Hogsback faults, Wyoming	--	4	SS 82

[1]As defined by the U.S. Geological Survey Quaternary Fault and Fold Database of the United States and the Utah Quaternary Fault Database.
[2]See the Paleoseismology of Utah Series Publications section of this report for full reference information and web links to reports.
[3]UGS publication type (CR – Contract Report, MP – Miscellaneous Publication, OFR – Open-File Report, and SS – Special Study).
[4]The UGS plans to update and re-release OFR-548 in the Paleoseismology of Utah series in 2013.
[5]UGS CR 93-7 and CR 93-8 predate the Paleoseismology of Utah series.

This compilation does not include FTR reports that were superseded by a subsequent UGS publication (Special Study, Miscellaneous Publication, or Contract Report series). Many of these publications are contained in the Paleoseismology of Utah series, and are available at http://geology.utah.gov/ghp/consultants/paleoseismic_series.htm. A list of publications in the Paleoseismology of Utah series to date is also available in this publication (see below). However, two UGS publications predate the Paleoseismology of Utah Series:

- Keaton, J.R., Currey, D.R., and Olig, S.J., 1987, Paleoseismicity and earthquake hazards evaluation of the West Valley fault zone, Salt Lake City urban area, Utah: Dames & Moore and University of Utah Department of Geography, unpublished Final Technical Report for the U.S. Geological Survey, contract no. 14-08-0001-22048, 55 p. + 33 p. appendix.
  - ◊ Subsequently published in 1993 as Utah Geological Survey Contract Report 93-8 and available at http://ugspub.nr.utah.gov/publications/contract_reports/CR-93-8.pdf.
- Keaton, J.R., and Currey, D.R., 1989, Earthquake hazard evaluation of the West Valley fault zone in the Salt Lake City urban area, Utah: Dames & Moore, unpublished consultant's Final Technical Report for the U.S. Geological Survey, contract no. 14-08-0001-G1397, 69 p.
  - ◊ Subsequently published in 1993 as Utah Geological Survey Contract Report 93-7 and available at http://ugspub.nr.utah.gov/publications/contract_reports/CR-93-7.pdf.

ACKNOWLEDGMENTS

We thank Tony Crone (USGS), Susan Olig (URS Corporation), Kathryn Hanson (AMEC Geomatrix, Inc.), Peter Knuepfer (Binghamton University), and Phil Pearthree (Arizona Geological Survey) for providing copies of many of these legacy reports; David Schwartz (USGS), Lloyd Cluff (retired), and Bert Swan (retired) for searching for many of these reports; and Ivan Wong (URS Corporation) for donating several of these reports and associated files to the UGS.

Table 2. Details about U.S. Geological Survey (USGS) National Earthquake Hazard Reduction Program Final Technical Reports (FTR) for Utah included in this compilation.

Year	Report PDF Filename (by author reference)	Subsequent Publication[2]	USGS Contract No.
1975	Woodward-Clyde Consultants, 1975.pdf	--	14-08-0001-14567
1978	Swan and others, 1978.pdf	USGS OFR 81-228	14-08-0001-16827
1981[1]	USGS OFR 81-228.pdf		
1979	Swan and others, 1979a.pdf	USGS OFR 81-229	14-08-0001-16827
1981[1]	USGS OFR 81-229.pdf		
1979	Swan and others, 1979b.pdf	--	14-08-0001-16827
1980	Swan and others, 1980.pdf	USGS OFR 81-450	14-08-0001-16827
1981[1]	USGS OFR 81-450.pdf		
1981	Hanson and others, 1981.pdf	--	14-08-0001-19115
1982	Hanson and others, 1982.pdf	--	14-08-0001-19842
1983	Swan and others, 1983.pdf	--	14-08-0001-19842 14-08-0001-20618[3]
1985	McCalpin, 1985.pdf	--	14-08-0001-21899
1999	Olig and others, 1999.pdf	--	1434-HQ-97-GR-03154
1999	Pearthree and others, 1999.pdf	AZGS OFR 99-8	1424-HQ-97-GR-03047
1999	AZGS OFR 99-8.pdf		
1999	Pechmann and Dinter, 1999.pdf	--	98HQGR1013
2000	McCalpin, 2000.pdf	--	99HQGR0058
2001	Olig and others, 2001.pdf	--	98HQGR1036
2011	Olig and others, 2011.pdf	--	02HQGR0109
2012	Evans and McCalpin, 2012.pdf	--	07HQGR0079

[1]Subsequent publication date.
[2]When an FTR report was subsequently published in an official publication series. AZGS (Arizona Geological Survey) and OFR (Open-File Report).
[3]FTR Summary contained in Volumes XV (15) and XVI (16) shows a contract number of 14-08-0001-20618; however, the FTR report shows a contract number of 14-08-0001-19842.

Table 3. Summary of U.S. Geological Survey (USGS) National Earthquake Hazards Reduction Program Summaries of Technical Reports publications included in this compilation.

Volume[1]		Publication Date	USGS Open-File Report (OFR)[2]	Report PDF Filename[3]	Utah Summaries of Technical Reports that Accompany Final Technical Reports Included in this Compilation and Volume Notes
I	1	January, 1976	--[2]	USGS STR V1.pdf	--
II	2	July, 1976	--[2]	USGS STR V2.pdf	--
III	3	February, 1977	--[2]	USGS STR V3.pdf	--
IV	4	July, 1977	--[2]	USGS STR V4.pdf	--
V	5	January, 1978	--[2]	USGS STR V5.pdf	--
VI	6	June, 1978	--[2]	USGS STR V6.pdf	--
VII	7	December, 1978	--[2]	USGS STR V7.pdf	Swan and others, 1978 (report pages 115-117)
VIII	8	June, 1979	--[2]	USGS STR V8.pdf	Swan and others, 1979a (report pages 121-123)
IX	9	December, 1979	80-6	USGS STR V9.pdf	Swan and others, 1979b (report pages 123-125)
X	10	June, 1980	80-842	USGS STR V10.pdf	Swan and others, 1980 (report pages 166-168)
XI	11	January, 1981	81-167	USGS STR V11.pdf	--
XII	12	June, 1981	81-833	USGS STR V12.pdf	Hanson and others, 1981 (report pages 106-109)
XIII	13	December, 1981	82-65	USGS STR V13.pdf	--
XIV	14	July, 1982	82-840	USGS STR V14.pdf	Hanson and others, 1982 (report pages 95-97)
XV	15	January, 1983	83-90	USGS STR V15.pdf	Swan and others, 1983 (report pages 106-109)
XVI	16	June, 1983	83-525	USGS STR V16.pdf	Swan and others, 1983 (report pages 113-117)
XVII	17	December, 1983	83-918	USGS STR V17.pdf	--
XVIII	18	June, 1984	84-628	USGS STR V18.pdf	--
XIX	19	December, 1985	85-22	USGS STR V19.pdf	McCalpin, 1985 (report pages 126-129)
XX	20	July, 1985	85-464	USGS STR V20.pdf	McCalpin, 1985 (report pages 105-108)
XXI	21	October, 1985	86-31	USGS STR V21.pdf	McCalpin, 1985 (report pages 134-136)
XXII	22	July, 1986	86-383	USGS STR V22.pdf	--
XXIII	23	October, 1986	87-63	USGS STR V23.pdf	--
XXIV	24	July, 1987	87-374	USGS STR V24.pdf	--
XXV	25	October, 1987	88-16	USGS STR V25.pdf	--
XXVI	26	July, 1988	88-434	USGS STR V26.pdf	--
XXVII	27	December, 1988	88-673	USGS STR V27.pdf	--
XXVIII	28	July, 1989	89-453	USGS STR V28.pdf	--
XXIX	29	December, 1989	90-54	USGS STR V29.pdf	--
XXX	30	July, 1990	90-334	USGS STR V30.pdf	--
XXXI	31	December, 1990	90-680	USGS STR V31.pdf	--
XXXII	32	July, 1991	91-352	USGS STR V32.pdf	--
XXXIII	33	October, 1991	92-258	USGS STR V33.pdf	Two book set.
XXXIV	34	December, 1992	93-195	USGS STR V34.pdf	Two book set.
XXXV	35	January, 1994	94-176	USGS STR V35.pdf	Two book set.
XXXVI	36	January, 1995	95-210	USGS STR V36A.pdf	Volume 1
				USGS STR V36B.pdf	Volume 2

[1]The USGS numbered Summary of Technical Report publications using Roman numerals; standard numbers are shown here for clarity.
[2]OFRs not published by the USGS prior to Volume IX (9) and discontinued with Volume XXXVI (36).
[3]PDF files of volumes I (1) to XVIII (18) from digital scans by the UGS and volumes XIX (19) to XXXVI (36) from the USGS website.

PALEOSEISMOLOGY OF UTAH SERIES PUBLICATIONS

UGS publications produced as part of the Paleoseismology of Utah series may be found online at http://geology.utah.gov/ghp/consultants/paleoseismic_series.htm and with the links given for each publication below.

1. Fault behavior and earthquake recurrence on the Provo segment of the Wasatch fault zone at Mapleton, Utah County, Utah—Paleoseismology of Utah, Volume 1, 1991, by Lund, W.R., Schwartz, D.P., Mulvey, W.E., Budding, K.E., and Black, B.D.: Utah Geological Survey Special Study 75, 41 p., available online at http://ugspub.nr.utah.gov/publications/special_studies/SS-75.pdf.
2. Paleoseismic analysis of the Wasatch fault zone at the Brigham City trench site, Brigham City, Utah and the Pole Patch trench site, Pleasant View, Utah—Paleoseismology of Utah, Volume 2, 1991, by Personius, S.F.: Utah Geological Survey Special Study 76, 39 p., available online at http://ugspub.nr.utah.gov/publications/special_studies/SS-76.pdf.
3. The number and timing of paleoseismic events on the Nephi and Levan segments, Wasatch fault zone, Utah—Paleoseismology of Utah, Volume 3, 1991, by Jackson, M.: Utah Geological Survey Special Study 78, 23 p., 3 plates, available online at http://ugspub.nr.utah.gov/publications/special_studies/SS-78.pdf.
4. Seismotectonics of north-central Utah and southwestern Wyoming—Paleoseismology of Utah, Volume 4, 1994, by West, M.W.: Utah Geological Survey Special Study 82, 93 p., 5 plates, scale 1:100,000, available online at http://ugspub.nr.utah.gov/publications/special_studies/SS-82.pdf.
5. Neotectonic deformation along the East Cache fault zone, Cache County, Utah—Paleoseismology of Utah, Volume 5, 1994, by McCalpin, J.P.: Utah Geological Survey Special Study 83, 37 p., available online at http://ugspub.nr.utah.gov/publications/special_studies/ss-83.pdf.
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10. Post-Bonneville paleoearthquake chronology of the Salt Lake City segment, Wasatch fault zone, from the 1999 “megatrench” site—Paleoseismology of Utah, Volume 10, 2002, by McCalpin, J.P.: Utah Geological Survey Miscellaneous Publication 02-7, 38 p., available online at http://ugspub.nr.utah.gov/publications/misc_pubs/MP-02-7WFZ-SLC.pdf.
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15. Surficial-geologic reconnaissance and scarp profiling on the Collinston and Clarkston Mountain segments of the Wasatch fault zone, Box Elder County, Utah—paleoseismic inferences, implications for adjacent segments and issues for diffusion-equation scarp-age modeling—Paleoseismology of Utah, Volume 15, 2007, by Hylland, M.D.: Utah Geological Survey Special Study 121, 18 p., CD, available online at http://ugspub.nr.utah.gov/publications/special_studies/SS-121.pdf.
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20. Compilation of U.S. Bureau of Reclamation Seismotectonic Studies in Utah, 1982–1999—Paleoseismology of Utah, Volume 20, 2011, compiled by Lund, W.R., Bowman, S.D., and Piety, L.A.: Utah Geological Survey Miscellaneous Publication 11-2, variously paginated, CD, available online at http://geology.utah.gov/online/mp/mp11-02/mp11-2.pdf.
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