

# **Appendix A**

## **Bibliography**

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Author	Report Date	Title	Publishing Information	Comments
Abitz, R.J.	1989	Geology and petrogenesis of the northern Emory caldera, Sierra County, New Mexico.	Ph.D. dissertation, University of New Mexico, Albuquerque, New Mexico.	Report is not relevant or contains dated material and so was not indexed.
Adams, D.C., and G.R. Keller.	1994	Crustal structure and basin geometry in south-central New Mexico.	In Keller, G.R., and S.M. Cather (eds.), Basins of the Rio Grande Rift: Structure, Stratigraphy and Tectonic Setting. Special Paper 291, Geological Society of America, Boulder, Colorado.	Interpretations of geophysical data (gravity anomalies). Report is not relevant or contains dated material and so was not indexed.
Anderholm, S.K.	1988	Ground-water geochemistry of the Albuquerque-Belen Basin, central New Mexico.	Water-Resources Investigations Report 86-4094. U.S. Geological Survey, Albuquerque, New Mexico.	Not reviewed intensively, appears to fall within scope of Middle Rio Grande study.
Anderholm, S.K.	1984	Hydrogeology of the Socorro and La Jencia Basins, Socorro County, New Mexico.	Water-Resources Investigations Report 84-4342. U.S. Geological Survey.	Not reviewed intensively, appears to fall within scope of Middle Rio Grande study.
Anderholm, Scott K.	1983	Hydrogeology of the Socorro and La Jencia Basins Area, Socorro County, New Mexico.	pp. 303-310. In Chapin, C.E. and J.F. Callender (eds). Socorro Region II. New Mexico Geological Society Thirty-Fourth Annual Field Conference, October 13-15, 1983.	Not reviewed intensively, appears to fall within scope of Middle Rio Grande study.
Andrews, C.B. and S.P. Larson.	1988	Evolution of water quality in the lower Rio Grande Valley, New Mexico (abs.).	Eos 69(16):357	Not reviewed intensively, appears to fall within scope of Middle Rio Grande study.
Arnet, P., R.S. Bowman, and D. B. Stephens.	1991	Geological structure and hydrologic properties in a heterogeneous vadose zone (poster session).	New Mexico Geology 13(4):94	Not reviewed intensively, appears to fall within scope of Middle Rio Grande study.
Bachman, G.O.	1968	Geology of the Mockingbird Gap quadrangle, Lincoln and Socorro Counties, New Mexico.	Professional Paper 594-J, U.S. Geological Survey.	Document not in hand
Bachman, G.O. and R.L. Harbour.	1970	Geologic map of the northern part of the San Andres Mountains, central New Mexico.	Scale 1:62,500, U.S. Geological Survey.	Document not in hand
Barroll, M.W., and M. Reiter	1991	Preliminary observations relating geothermal anomalies and ground-water flow in the Bosque del Apache area, Socorro County, New Mexico (abstract only).	New Mexico Geology 13(4):91	Not reviewed intensively, appears to fall within scope of Middle Rio Grande study.
Barroll, Margaret W.	1989	Analysis of the Socorro hydro-geothermal system, central New Mexico.	Ph.D. dissertation, New Mexico Institute of Mining and Technology, Socorro, NM.	

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Bartolino, J.R.(ed.)	1999	U.S. Geological Survey Middle Rio Grande Basin Study--Proceedings of the Third Annual Workshop, Albuquerque, New Mexico, February 24-25, 1999.	Open-File Report 99-203. U.S. Geological Survey, Albuquerque, New Mexico.	Not reviewed intensively, appears to fall within scope of Middle Rio Grande study.
Bates, R.L., R.H. Wilpolt, A.J. MacAlpin, and G. Vorbes.	1947	Geology of the Gran Quivira quadrangle, New Mexico.	Bulletin 26, New Mexico Bureau of Mines and Mineral Resources, Socorro, New Mexico.	Document not in hand. Geologic map of northeast Socorro County and northern Chupadera (?) Mesa area.
Bedinger, M.S., K. A. Sargent, and W. H. Langer.	1990	Studies of geology and hydrology in the Basin and Range Province, southwestern United States for isolation of high-level radioactive waste—Evaluation of the regions.	Professional Paper 1370-H, U.S. Geological Survey.	Provides general description of the Rio Grande Region; too broad to be helpful in the planning area. Two cross sections provided in pocket.
Bedinger, M.S., K.A. Sargent and B.T. Brady.	1985	Geologic and Hydrologic Characterization and Evaluation of the Basin and Range Province Relative to the Disposal of High-Level Radioactive Waste: Part III. Geologic and Hydrologic Evaluation.	Circular 904-C. U.S. Geological Survey.	Report is not relevant or contains dated material and so was not indexed. Our study area is in the Rio Grande subprovince, described pp 5-7.
Bedinger, M.S., K.A. Sargent and J.E. Reed.		Geologic and Hydrologic Characterization and Evaluation of the Basin and Range Province Relative to the Disposal of High-level Radioactive Waste: Part I. Introduction and Guidelines.	Circular 904-A., U.S. Geological Survey.	Report is not relevant or contains dated material and so was not indexed.
Bedinger, M.S., K.A. Sargent, and W.H. Langer.	1989	Studies of geology and hydrology in the Basin and Range Province, Southwestern United States, for isolation of high-level radioactive waste—Characterization of the Rio Grande region, New Mexico and	Professional Paper 1370-C. U.S. Geological Survey.	This report covers a large area which encompasses the planning region.
Bedinger, M.S., K.A. Sargent, W.H. Langer, F.B. Sherman, J.E. Reed, and B.T. Brady.	1989	Studies of geology and hydrology in the Basin and Range Province, southwestern United States, for isolation of high-level radioactive waste—Basis of characterization and evaluation.	U.S. Geological Survey Professional Paper 1370-A.	Generally useful for intra-state basin and range region.

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Bedinger, M.S., W.H. Langer, and J.E. Reed.	1989	Ground-water hydrology.	pp. C27-C34. <i>In</i> Bedinger et al. (eds.), Studies of Geology and Hydrology in the Basin and Range Province, Southwestern United States, For Isolation of High-Level Radioactive Waste—Characterization of the Rio Grande Region, New Mexico and Texas. USGS Professional Paper 1370-C.	
Blaney, H.F. and E.G. Hanson.	1965	Consumptive use and water requirements in New Mexico.	Technical Report 32. New Mexico State Engineer, Santa Fe, New Mexico.	Report is not relevant or contains dated material and so was not indexed. However, report contains a method for estimating consumptive use of water by crops, and a discussion of consumptive use of water by naturally-occurring phreatophytes
Bliss, J.D.	1983	New Mexico Basic data for thermal springs and wells as recorded in <del>GEOTHERM</del>	Open-file report 83-434, U.S. Department of the Interior Geological Survey.	Contains list of thermal springs in study area.
Blodgett, D.D. and F.B. Titus.	1973	Hydrogeology of the San Augustin Plains, New Mexico.	Independent study submitted for M.S. degree to NMIMT, Open File Report 51, New Mexico Bureau of Mines and Mineral Resources, Socorro, New Mexico.	
Bloodgood, D.W.	1930	The ground water of middle Rio Grande Valley and its relation to drainage.	Bulletin No. 184. Agriculture Experimental Station of the New Mexico College of Agriculture and Mechanic Arts, State College, New Mexico. May 1930. 60 p.	Not reviewed intensively, appears to fall within scope of Middle Rio Grande study.
Bowers, R.L.	1990	Geology, hydrology, and associated potential environmental impacts of the Aerial Cable Test Capability (ACTC) Project, White Sands Missile Range, New Mexico.	Physical Science Laboratory, New Mexico State University.	
Bowman, R.S., and J.M.H. Hendrickx.	1998	Determination of agricultural chemical impacts on shallow groundwater quality in the Rio Grande Valley: Las Nutrias Groundwater Project.	WRRRI Report No. 308. New Mexico Water Resources Research Institute, Las Cruces, New Mexico.	
Brady, B.T., D.A. Mulvihill, D.L. Hart, and W.H. Langer.	1984	Maps showing ground-water levels, springs and depths to groundwater, Basin and Range Province, New Mexico.	Water-Resources Investigations Report 83-4118-B, U.S. Geological Survey.	

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Author	Report Date	Title	Publishing Information	Comments
Brady, B.T., M.S. Bedinger, and D.L. Hart.	1984	Maps showing ground-water units and withdrawal, Basin and Range Province, New Mexico.	Water Resources Investigations Report 83-4118A. U.S. Geological Survey, 6 p., pbk.	Report is not relevant or contains dated material and so was not indexed.
Brown, L.D., P.A. Krumhansl, C.E. Chapin, A.R. Sanford, F.A. Cook, S. Kaufman, J.E. Oliver, and F.S. Schilt.	1979	COCORP seismic reflection studies of the Rio Grande rift.	pp. 169-184. In Riecker, R.E. (ed.) Rio Grande Rift: Tectonics and Magmatism. American Geophysical Union, Washington, D.C.	Not reviewed intensively, appears to fall within scope of Middle Rio Grande study.
Brown, R.H.	1963	Drawdowns resulting from cyclic intervals of discharge.	pp. 324-331. In Benthall, R. (ed.) Methods of determining permeability, transmissibility and drawdown: Ground-water hydraulics. Water Supply Paper 1536-I. U.S. Geological Survey.	Report is not relevant or contains dated material and so was not indexed.
Bruning, J.E.	1973	Origin of the Popotosa Formation, north-central Socorro County, New Mexico.	Ph.D. dissertation, New Mexico Institute of Mining and Technology, July 1973. 132 p.	
Burkholder, J.L.	1928	Report of the Chief Engineer, submitting a plan for flood control, drainage and irrigation of the Middle Rio Grande Conservancy Project, Volume I: The official plan.	State of New Mexico Middle Rio Grande Conservancy District. 248 p.	Dated material, not reviewed.
Bushman, F. X.	1963	Ground water in the Socorro Valley.	pp. 155-159. In Kuellmer, F.J. (ed.) Guidebook of the Socorro Region, New Mexico. New Mexico Geological Society Fourteenth Field Conference, October 4, 5, and 6, 1993.	Not reviewed intensively, appears to fall within scope of Middle Rio Grande study.
Cather, S.M., W.C. McIntosh, and C.E. Chapin.	1987	Stratigraphy, age, and rates of deposition of the Datil Group (Upper Eocene-Lower Oligocene), west-central New Mexico.	New Mexico Geology 9(3):50-54.	Loaned by John Hawley
Chamberlin, R.M., B.S. Kues, S.M. Cather, J.M. Barker, and W.C. McIntosh (eds).	1994	Mogollon Slope, West-Central New Mexico and East-Central Arizona.	New Mexico Geological Society, forty-fifth annual field conference, September 28-October 1, 1994.	Report is not relevant or contains dated material and so was not indexed.

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Author	Report Date	Title	Publishing Information	Comments
Chapin, C.E.	1971	The Rio Grande Rift, Part 1: Modifications and additions.	In James, H.L. (ed.), Guidebook of the San Luis Basin, Twenty-second Field Conference, September 30-October 1-2, 1971, New Mexico Geological Survey.	Report is not relevant or contains dated material and so was not indexed.
Chapin, C.E.	1994	Evolution of the Rio Grande Rift—A summary.	In Keller, G.R., and S.M. Cather (eds.), Basins of the Rio Grande Rift: Structure, Stratigraphy and Tectonic Setting. Special Paper 291, Geological Society of America, Boulder,	Up-to-date review of Rio Grande rift structure and stratigraphy.
Chapin, C.E. and S.M. Cather	1994	Tectonic setting of the axial basins of the northern and central Rio Grande rift.	In Keller, G.R. and S.M. Cather, eds., Basins of the Rio Grande Rift: Structure, Stratigraphy, and Tectonic Setting. Geological Society of America Special Paper 291.	Document not in hand
Chapin, C.E., A.R. Sanford, D.W. White, R.M. Chamberlin, and	1979	Geological investigation of the Socorro geothermal area, final report.	New Mexico Energy Institute at New Mexico State University.	Not reviewed intensively, appears to fall within scope of Middle Rio Grande study.
Chapin, C.E., R.B. Blakestad, and W.T. Siemers.	1975	Geology of the Magdalena area.	pp. 43-49. In Callender, J.F. and R.E. Zilinski (eds). Field trips to central New Mexico: Part 2. Pennsylvanian stratigraphy, structure, and petroleum geology of a portion of central New Mexico. Annual American Association of Petroleum Geologists, Society of Economic Paleontologists and Mineralogists Rocky Mountain Sections Meeting, Albuquerque, New Mexico, June 1-4, 1975.	
Chapin, C.E., R.M. Chamberlin, G.R. Osburn, and D.W. White.	1978	Exploration Framework of the Socorro Geothermal Area, New Mexico.	pp. 115-129, In Chapin, C.E., and W.E. Elston (eds), Field Guide to Selected Cauldrons and Mining Districts of the Datil-Mogollon Volcanic Field, New Mexico. Special Publication No. 7, New Mexico Geological Society.	Report is not relevant or contains dated material and so was not indexed.
Clark, N.J. and W.K. Summers.	1971	Records of wells and springs in the Socorro and Magdalena areas, Socorro County, New Mexico, 1968.	Circular 115, New Mexico Bureau of Mines and Mineral Resources, Socorro, New Mexico.	Not reviewed intensively, appears to fall within scope of Middle Rio Grande study.

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Author	Report Date	Title	Publishing Information	Comments
Conover, C.S., E.H. Herrick, J.W. Wood, and J.E. Weir, Jr.	1955	The occurrence of groundwater in south-central New Mexico.	In Guidebook of South-Central New Mexico, Sixth Field Conference, November 11-12 & 13, 1955, New Mexico Geological Society.	
Contaldo, G.J., and J.E. Mueller.	1991	Earth fissures of the Mimbres Basin, southwestern New Mexico.	New Mexico Geology 13(4):69-74	Report is not relevant or contains dated material and so was not indexed.
Cox, E.R., and H.O. Reeder.	1962	Ground-water conditions in the Rio Grande Valley between Truth or Consequences and Las Palomas, Sierra	Technical Report 25. New Mexico State Engineer Office.	Appears to fall within scope of Middle Rio Grande study.
Cox, E.W., M.L. Hermann, and C.E. Hesse.	1988	Geology and ore deposits of the southern San Mateo Mountains, Socorro County, New Mexico (abs.).	New Mexico Geology 10(2):41	Report is not relevant or contains dated material and so was not indexed.
Cruz, R.R.	1984	Annual water-resources review, White Sands Missile Range, New Mexico, 1983.	Open-File Report 84-720, U.S. Geological Survey, Albuquerque, New Mexico.	Report is not relevant or contains dated material and so was not indexed.
Dane, C.H., and G.O. Bachman.	1965	Geologic map of New Mexico.	U.S. Geological Survey, 2 sheets, scale 1:500,000.	Document not in hand
Davie, W. Jr., and Z. Spiegel.	1967	Las Animas Creek Hydrographic Survey Report, Geology and Water Resources of Las Animas Creek and Vicinity, Sierra County, New Mexico.	New Mexico State Engineer Office.	Not reviewed intensively, appears to fall within scope of Middle Rio Grande study.
DeLillo, N.J.	1991	Geology and geochemistry of gold mineralization in the Jornada Vista Prospect, Fra Cristobal Range, New Mexico.	M.S. thesis, Colorado School of Mines, Golden, Colorado.	Report is not relevant or contains dated material and so was not indexed.
Dinwiddie, G.A., W.A. Mourant, and J.A. Basler.	1966	Municipal water supplies and uses, southwestern New Mexico.	Technical Report 29D, New Mexico State Engineer, Santa Fe, New Mexico.	Contains useful historical data regarding water use in municipalities with populations >100 in 1965. May be useful for non-technical parts of the water plan
Doty, G.C.	1968	Test wells drilled at Mockingbird Gap, Socorro County, N.Mex., June to October 1965.	Open-File Report. U.S. Geological Survey, Albuquerque, New Mexico., February 1968. 23 p.	Describes difficulties of locating groundwater outside of the major basins. Aquifer is the Permian Glorieta Sandstone
Elston, W. E.	1957	Geology and Mineral Resources of Dwyer Quadrangle, Grant, Luna, and Sierra Counties, New Mexico.	Bulletin 38. New Mexico Bureau of Mines and Mineral Resources.	Re groundwater, pp. 76-77 describe the two springs which occur in the quad, neither of which appear to be located in Sierra County.

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Author	Report Date	Title	Publishing Information	Comments
Elston, W.E., R.C. Rhodes, P.J. Coney, and E.G. Deal.	1976	Progress report on the Mogollon Plateau volcanic field, southwestern New Mexico, No. 3—Surface expression of a pluton.	In Elston, W.E., and S.A. Northrop (eds.), Cenozoic Volcanism in Southwestern New Mexico, New Mexico Geological Society Special Publication No. 5.	Report is not relevant or contains dated material and so was not indexed.
Gelhar, L.W., P.J. Wierenga et al.	1980	Irrigation return flow studies at San Acacia, New Mexico: Monitoring, modeling and variability.	Report No. H-3, Hydrology Research Program, New Mexico Institute of Mining and Technology	Not reviewed intensively, appears to fall within scope of Middle Rio Grande study.
Gelhar, L.W., P.J. Wierenga, C.J. Duffy, K.R. Rehfeldt, R.B. Senn, M. Simonett, T-C. Yeh, A.L. Gutjahr, W.R. Strong, and A. Pustamoto	1980	Irrigation-return flow studies at San Acacia, New Mexico - Monitoring, modeling and variability.	Report H-3, Hydrology Research Program, New Mexico Institute of Mining and Technology, Socorro, New Mexico. July 1980.	Not reviewed intensively, appears to fall within scope of Middle Rio Grande study. Focus is on surface water.
Gosz, J.R., D.I. Moore, and H.D. Grover, et al.	1993	Analysis of relationships between lightning, precipitation, and runoff.	WRRI Report No. 276. New Mexico Water Resources Research Institute, Las Cruces, New Mexico. March 1993.	Contains some surface water data. Appears to fall into Middle Rio Grande study area, although not specifically applicable in any case.
Gross, G.R. and R. Wilcox.	1983	Groundwater circulation in the Socorro geothermal area.	pp. 311-318. In Chapin, C.E. and J.F. Callender (eds). Socorro Region II. New Mexico Geological Society Thirty-Fourth Annual Field Conference, October 13-15, 1983.	Not reviewed intensively, appears to fall within scope of Middle Rio Grande study.
Hall, F. R.	1963	Springs in the Vicinity of Socorro, New Mexico.	pp. 160-179. In Kuellmer, F.J. (ed.) Guidebook of the Socorro Region, New Mexico. New Mexico Geological Society Fourteenth Field Conference, October 4, 5, and 6, 1963.	Not reviewed intensively, appears to fall within scope of Middle Rio Grande study.
Hammond, J.F.	1966	A surgeon's report on Socorro, New Mexico, 1852.	Stagecoach Press, Santa Fe, New Mexico, 47 p.	Not reviewed, not related to hydrology of the area.
Haneberg, W.C., and C.B. Reynolds.	1991	Geophysical constraints on a mechanical model for the origin of the San Marcial earth fissure (abs.).	New Mexico Geology 13(2):38	Report is not relevant or contains dated material and so was not indexed.
Harley, G.T.	1934	The geology and ore deposits of Sierra County, New Mexico.	Bulletin 10, New Mexico Bureau of Mines and Mineral Resources.	Report is not relevant or contains dated material and so was not indexed.



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Author	Report Date	Title	Publishing Information	Comments
Hawkins, D.B. and D.B. Stephens.	1980	Geothermal data availability for computer simulation in the Socorro Peak KGRA, Socorro County, New Mexico.	Completion Report No. H-5 on Hydrology Studies-Socorro Area, Project No. 77-2211. Hydrology Research Program, New Mexico Institute of Mining and Technology, Socorro, New Mexico.	Document not reviewed, as it falls into the Middle Rio Grande study area.
Hawley, J.W.	1983	Quaternary geology of the Rhodes Canyon (RATSCAT) site.	pp. 17-32 <i>In</i> Eidenbach, P.L. (ed.) The Prehistory of Rhodes Canyon, N.M. Prepared for Dynalectron Corporation by Human Systems Research, Inc., Tularosa, New Mexico.	Loaned by John Hawley
Hawley, J.W.	1986	Environmental geology of the Keers Environmental, Inc. asbestos disposal site, Torrance County, New Mexico.	Open-File Report 245, New Mexico Bureau of Mines and Mineral Resources, Socorro, New Mexico.	Discussion of possible connection of Estancia and Tularosa Basin groundwater flow regimes in northern Socorro County (and reference
Hawley, J.W.	1993	Geomorphic setting and late Quaternary history of pluvial-lake basins in the southern New Mexico region.	Open-File Report 391, New Mexico Bureau of Mines and Mineral Resources, Socorro, New Mexico.	Document not in hand
Hawley, J.W.	1975	Quaternary history of Dona Ana County region, south-central New Mexico.	pp. 139-150. <i>In</i> New Mexico Geological Society Guidebook, 26th Field Conference, Las Cruces Country.	Loaned by John Hawley
Hawley, J.W. (comp.).	1978	Guidebook to Rio Grande Rift in New Mexico and Colorado.	Circular 163, New Mexico Bureau of Mines and Mineral Resources.	
Hawley, J.W., and D.W. Love.	1991	Quaternary and Neogene landscape evolution: A transect across the Colorado Plateau and Basin and Range provinces in west-central and central New Mexico.	pp. 105-148. <i>In</i> Julian, B., and J. Zidek (eds.) Field guide to geologic excursions in New Mexico and adjacent areas of Texas and Colorado. Bulletin 137, New Mexico Bureau of Mines & Mineral Resources, Socorro, New Mexico.	Loaned by John Hawley
Hawley, J.W., G.O. Bachman, and K. Manley.	1976	Quaternary stratigraphy of Basin and Range and Great Plains provinces, New Mexico and western Texas.	pp. 235-274. <i>In</i> Mahaney, W.C. (ed.), Quaternary stratigraphy of North America. Dowden, Hutchinson and Ross, Stoudsburg, Pennsylvania.	Document not in hand
Healy, D.F.	1997	Water-quality assessment of the Rio Grande Valley, Colorado, New Mexico, and Texas—Summary and analysis of water-quality data for the basic-fixed-site network, 1993-95.	Water Resources Investigations Report 97-4212. U.S. Geological Survey, Albuquerque, New Mexico.	Document not reviewed, as it falls into Middle Rio Grande study area.

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Author	Report Date	Title	Publishing Information	Comments
Hearne, G.A. and J.D. Dewey.	1988	Hydrologic analysis of the Rio Grande Basin north of Embudo, New Mexico, Colorado and New Mexico.	Water-Resources Investigations Report 86-4113, U.S. Geological Survey. 244p.	Document not in hand
Heath, D. L.	1983	Flood and recharge relationships of the lower Rio Puerco, New Mexico.	pp. 329-338. In Chapin, C.E. and J.F. Callender (eds). Socorro Region II. New Mexico Geological Society Thirty-Fourth Annual Field Conference, October 13-15, 1983.	provides plot of annual peak discharge, Pearson flood magnitude/frequency curves for gauging stations on the Rio Puerco, Streambed K, perched zones described
Herrick, E.H., and L.V.	1965	Availability of ground water in Tularosa Basin and adjoining areas, New Mexico and Texas.	Hydrologic Investigations Atlas HA-191, U.S. Geological Survey, Washington, D.C. 2 p.	Map is source to show the lack of potable groundwater sources in eastern Sierra and Socorro counties. Shows some potable water available at Mockingbird Gap
Hunt, A.P., and S.G. Lucas.	1987	Southernmost outcrops of the Morrison Formation in the Carthage area, Socorro County, New Mexico.	New Mexico Geology 9(3):58-62.	Loaned by John Hawley
Isik, I. and K.F. Clark.	1992	Preliminary studies of Kline Mountain kaolinization and its economic potential, Sierra County, New Mexico (abs.).	New Mexico Geology 14(2):42	Report is not relevant or contains dated material and so was not indexed.
Jacob, C.E. and S.W. Lohman.	1952	Nonsteady flow to a well of constant drawdown in an extensive aquifer.	Trans. Am. Geophys. Union 33(4):559-569.	Report is not relevant or contains dated material and so was not indexed.
Jahns, R.H.	1957	The Pelican area, Palomas (Hermosa) district, Sierra County, New Mexico.	Bulletin 55, State Bureau of Mines and Mineral Resources, New Mexico Institute of Mining and Technology, Socorro, New Mexico.	Report is not relevant or contains dated material and so was not indexed intensively.
Jahns, R.H., D.K. McMillan, J.D. O'Brient, and D.L. Fisher.	1978	Geologic Section in the Sierra Cuchillo and Flanking Areas, Sierra and Socorro Counties, New Mexico.	pp. 130-138, In Chapin, C.E., and W.E. Elston (eds), Field Guide to Selected Cauldrons and Mining Districts of the Datil-Mogollon Volcanic Field, New Mexico. Special Publication No. 7, New Mexico Geological Society.	
Jiracek, G.R.	1983	Hydrological investigations near Socorro, New Mexico using electrical resistivity.	pp. 319-324, In Chapin, C.E. (ed.) Socorro Region II, New Mexico Geological Society Thirty-Fourth Annual Field Conference, October 13-15, 1983.	Not reviewed intensively, appears to fall within scope of Middle Rio Grande study.
Johnpeer, G. D. and B. M. Hamil.	1983	Engineering geology of the Socorro area, New Mexico.	pp. 339-344, In Chapin, C.E. (ed.) Socorro Region II, New Mexico Geological Society Thirty-Fourth Annual Field Conference, October 13-15, 1983.	Not reviewed intensively, appears to fall within scope of Middle Rio Grande study. has engineering geology/depth to water map of area between Rio Grande and Socorro

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Johnson, W.D. Jr., J.W. Hawley, W.J. Stone, F.E. Kottowski, C.D. Henry, and J.G. Price.	1989	Geology.	pp. C7-C19. In Bedinger et al. (eds.), Studies of Geology and Hydrology in the Basin and Range Province, Southwestern United States, For Isolation of High-Level Radioactive Waste—Characterization of the Rio Grande Region, New Mexico and Texas. USGS Professional Paper 1370-C.	
Julian, B., and J. Zidek (eds.).	1991	Field guide to geologic excursions in New Mexico and adjacent areas of Texas and Colorado.	Bulletin 137, New Mexico Bureau of Mines & Mineral Resources, Socorro, New Mexico.	Loaned by John Hawley
Keller, G.R., and S.M. Cather (eds.).	1994	Basins of the Rio Grande Rift: Structure, stratigraphy, and tectonic setting.	Special Paper 291, Geological Society of America, Boulder, Colorado.	Loaned by John Hawley
Kelley, V.C.	1952	Tectonics of the Rio Grande Depression of central New Mexico.	pp. 93-105. In Guidebook of the Rio Grande Country, Central New Mexico, New Mexico Geological Society Third Field Conference, October 3-4-5, 1952.	Report is not relevant or contains dated material and so was not indexed.
Kelley, V.C. and C. Silver.	1952	Geology of the Caballo Mountains.	UNM Publications in Geology No. 4. University of New Mexico Press, Albuquerque, New Mexico.	
Kelley, V.C., G.H. Wo	1946	Lucero uplift, Valencia, Socorro, and Bernalillo Counties, New Mexico.	U.S. Geological Survey Oil and Gas Investigation Preliminary Map 47.	
Kelly, T. and H. E. Taylor.	1996	Concentrations and loads of selected trace elements and other constituents in the Rio Grande in the vicinity of Albuquerque, New Mexico, 1994.	Open-File Report 96-126, U.S. Geological Survey, Albuquerque, New Mexico.	Surface water quality in MRG, article not reviewed since area is outside our scope
Kelly, T.E.	1974	Reconnaissance investigation of ground water in the Rio Grande Drainage Basin - With special emphasis on saline ground-water resources	Hydrologic Investigations Atlas HA-510, U.S. Geological Survey, Washington, D.C.	
Kernodle, J.M.		Simulation of ground-water flow in the Albuquerque Basin, Central New Mexico, 1901-95, with projections to 2020 (supplement two to U.S. Geological Survey Water-Resources Investigations Report 94-4251).	Open-File Report 96-209, U.S. Geological Survey, Albuquerque, New Mexico.	Not reviewed intensively, appears to fall within scope of Middle Rio Grande study.

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Kernodle, J.M. and W.B. Scott.	1986	Three-dimensional model simulation of steady-state ground-water flow in the Albuquerque-Belen Basin, New Mexico.	Water-Resources Investigations Report 84-4353. U.S. Geological Survey, Albuquerque, New Mexico.	Not reviewed intensively, appears to fall within scope of Middle Rio Grande study.
King, W.E., J.W. Hawley, A.M. Taylor, and R.P. Wilson.	1969	Hydrogeology of the Rio Grande Valley and adjacent intermontane areas of southern New Mexico.	WRRI Report No. 6, Water Resources Research Institute, New Mexico State University, Las Cruces, New Mexico.	Restricted to Dana Ana County area
King, W.E., J.W. Hawley, A.M. Taylor, and R.P. Wilson.	1971	Geology and ground-water resources of central and western Doña Ana County, New Mexico.	Hydrologic Report 1, State Bureau of Mines and Mineral Resources, New Mexico Institute of Mining and Technology, Socorro, New Mexico.	Study area was outside of the planning region.
Kottlowski, F.E.		Paleozoic and Mesozoic strata of southwestern and south-central New Mexico.	Bulletin 79. State Bureau of Mines and Mineral Resources, New Mexico Institute of Mining & Technology, Socorro, New Mexico.	Report is not relevant or contains dated material and so was not indexed.
Kuellmer, F.J. (ed.).	1963	Guidebook of the Socorro Region, New Mexico.	New Mexico Geological Society Fourteenth Field Conference, October 4, 5, and 6, 1993.	Not reviewed intensively, appears to fall within scope of Middle Rio Grande study.
LaGasse, P. F.	1981	Geomorphic response of the Rio Grande to dam construction.	In Wells, S.G. and W. Lambert (eds.) Environmental Geology and Hydrology in New Mexico. New Mexico Geological Society, Special Publication No. 10.	Not reviewed intensively, appears to fall within scope of Middle Rio Grande study.
Lohman, S.W.	1972	Ground-water hydraulics.	Geological Survey Professional Paper 708. United States Department of the Interior, Geological Survey, Washington, D.C.	Report is not relevant or contains dated material and so was not indexed.
Lozinsky, R.P.	1986	Geology and late Cenozoic history of the Elephant Butte area.	Circular 187, New Mexico Bureau of Mines and Mineral Resources.	
Lozinsky, R.P.	1987	Cross section across the Jornada del Muerto, Engle, and northern Palomas Basins, south-central New Mexico.	New Mexico Geology 9(3):55-57.	Loaned by John Hawley
Lueth, V.W., and T.M. Whitworth.	1994	Evidence for geologic membrane effects at two New Mexico red bed copper districts (abs.).	New Mexico Geology 16(2):36	Report is not relevant or contains dated material and so was not indexed.
Machette, M.N.	1978	Geologic Map of the San Acacia Quadrangle, Socorro County, New Mexico.	Map GQ-1415, 1:24000, U.S. Geological Survey.	Report is not relevant to hydrology and so was not indexed intensively.

## Socorro Sierra Regional Water Plan

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Author	Report Date	Title	Publishing Information	Comments
Mattingly, B.E.	1990	Hydrogeologic evaluation and two-dimensional model development for St. Cloud Mining Company ground water applications in the Winston-Chloride area, Sierra County, New Mexico.	Technical Division Hydrology Report 90-4, New Mexico State Engineer Office, May 1990.	
Mattingly, B.E.	1990	Hydrogeologic evaluation of surface and ground water in the Cuchillo area, Sierra County, New Mexico, due to a proposed temporary ground water withdrawal by PCL Civil Constructors, Inc.	Technical Division Hydrology Report 90-6, New Mexico State Engineer Office, July 1990.	Not reviewed intensively, appears to fall within scope of Middle Rio Grande study.
McLean, J.S.	1970	Saline ground-water resources of the Tularosa Basin, New Mexico.	U.S. Geological Survey. Prepared in cooperation with the New Mexico State Engineer and the Office of Saline Water, Department of the Interior, OSW Agreement No. 14-01-0001-2091. June 1970.	
Meinzer, O.E.	1911	Geology and water resources of Estancia Valley, New Mexico, with notes on ground-water conditions in adjacent parts of central New Mexico.	Water-Supply Paper 275, U.S. Geological Survey.	Loaned by John Hawley
Meinzer, O.E. and R.F. Hare.	1915	Geology and water resources of Tularosa Basin, New Mexico.	Water-Supply Paper 343, U.S. Geological Survey.	
Munroe, Erik A.	1999	Geology and geochemistry of waste rock piles in the Hillsboro mining district, Sierra County, New Mexico.	M.S. thesis, New Mexico Institute of Mining and Technology	Report is not relevant or contains dated material and so was not indexed.
Murray, C.R.	1959	Ground-water conditions in the nonthermal artesian-water basin south of Hot Springs, Sierra County, New Mexico.	Technical Report 10. New Mexico State Engineer Office, Santa Fe, New Mexico.	Not reviewed intensively, appears to fall within scope of Middle Rio Grande study.
Myers, R.G.	1988	Hydrogeology of the San Agustin Basin, the Alamosa Creek basin upstream from Monticello Box, and the upper Gila Basin, west-central New Mexico (abs.).	New Mexico Geology 10(3):67	
Myers, R.G., and S.C. Sharp.	1992	Annual water-resources review, White Sands Missile Range, New Mexico, 1988.	Open-File Report 92-465, U.S. Geological Survey, Albuquerque, New Mexico.	Data were not reported from wells in the planning region in this report.
Myers, R.G., and S.C. Sharp.	1989	Biannual water-resources review, White Sands Missile Range, New Mexico.	Open-File Report 89-49, U.S. Geological Survey.	

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Author	Report Date	Title	Publishing Information	Comments
Myers, R.G., J.T. Everheart, and C.A. Wilson.	1994	Geohydrology of the San Agustin Basin, Alamosa Creek Basin upstream from Monticello Box, and upper Gila Basin in parts of Catron, Socorro, and Sierra Counties, New Mexico.	Water-Resources Investigations Report 94-4125. U.S. Geological Survey, Albuquerque, New Mexico.	Contains results of aquifer tests, gradients
National Oceanic and Atmospheric Administration.	??	Climatological data. New Mexico annual summaries, 1954-1990: Temperature, precipitation, evaporation.	U.S. Department of Commerce, NOAA, NWS.	
Neal, J.T., R.E. Smith, and B.F. Jones.	1983	Pleistocene Lake Trinity, an evaporite basin in the northern Jornada del Muerto, New Mexico.	pp. 285-290. In Chapin, C.E. (ed.) Socorro Region II. New Mexico Geological Society Thirty-Fourth Annual Field Conference, October 13-15, 1983.	Document not in hand
New Mexico Interstate Stream Commission and New Mexico State Engineer Office.	1974	County profile, Sierra County water resources assessment for planning purposes.	Santa Fe, New Mexico. 1974.	
New Mexico Interstate Stream Commission and New Mexico State Engineer Office.	1974	County profile, Socorro County water resources assessment for planning purposes.	Santa Fe, New Mexico. 1974.	
New Mexico State Engineer Office.	1959	New Mexico streamflow and reservoir content, 1888-1954, hydrologic summary.	Technical Report No. 7, State Engineer Office, Santa Fe, New Mexico.	Report is not relevant or contains dated material and so was not indexed.
New Mexico Water Resources Research Institute.	1989	Water planning from the town up.	WRRRI Report No. 238. Proceedings of the 33rd Annual New Mexico Water Conference, Santa Fe, New Mexico. October 27-28, 1988.	Not applicable technically but good information for planning
Ong, K., T.F. O'Brien, and M.D. Rucker.	1991	Reconnaissance investigations of water quality, bottom sediment, and biota associated with irrigation drainage in the Middle Rio Grande Valley and Bosque del Apache National Wildlife Refuge, New Mexico, 1988-1989.	Water Resources Investigations Report 91-4036. U.S. Geological Survey, Albuquerque, New Mexico.	Not reviewed intensively, appears to fall within scope of Middle Rio Grande study.

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Author	Report Date	Title	Publishing Information	Comments
Orr, B.R. and R.G. Myers.	1986	Water Resources in Basin-Fill Deposits in the Tularosa Basin, New Mexico.	Water-Resources Investigations Report 85-4219. U.S. Geological Survey, Albuquerque, New Mexico.	Study area contains very small portions of Sierra County, need to read carefully to delineate. Has geologic maps in plan view. Water salinity estimated through the use of surface electrical-resistivity soundings; resistivity data correlated with existing well data.
Osburn, G.R.	1978	Geology of the eastern Magdalena Mountains: Water Canyon to Pound Ranch, Socorro County, New Mexico.	M.S. thesis, New Mexico Institute of Mining and Technology.	Primarily petrography/stratigraphy/structure
Osburn, G.R.	1984	Socorro County geologic map.	Open File Report 238, New Mexico Bureau of Mines & Mineral Resources, Socorro, New Mexico.	
Osburn, G.R. and C.E. Chapin.	1983	Nomenclature for Cenozoic rocks of northeast Mogollon-Datil volcanic field, New Mexico.	Stratigraphic Chart 1, New Mexico Bureau of Mines and Mineral Resources.	Document not in hand.
Petty, D. M.	1979	Geology of the southeastern Magdalena Mountains, Socorro County, New Mexico.	M.S. thesis, New Mexico Institute of Mining and Technology.	Primarily petrography/stratigraphy/structure
Phillips, F.M., A.R. Campbell, C. Kruger, P. Johnson, R. Roberts, and E. Keyes.	1992	A reconstruction of the response of the water balance in western United States lake basins to climatic change	WRRRI Report No. 269, Water Resources Research Institute, Las Cruces, New Mexico	Document not in hand.
Ramsey, R.	1994	Socorro-Sierra regional water plan.	Socorro Soil and Water Conservation District, Socorro, New Mexico. May 1994.	
Randall, A. and J. Dewbre.	1972	Inventory of water diversions and rate structures for cities, towns, and villages in New Mexico.	New Mexico State University Agricultural Experiment Station Research Report 241, 50 p.	Report is not relevant or contains dated material and so was not indexed.
Reiland, L.J.	1980	Flow Characteristics of New Mexico Streams: Part 1, Flow Duration.	Special Report, New Mexico State Engineer, Santa Fe, New Mexico.	Surface water report.
Reilinger, R. and J. Oliver.	1976	Modern uplift associated with a proposed magma body in the vicinity of Socorro, New Mexico.	Geology 4(10):583-586.	Article reports on investigation of uplift; not related to hydrology of the area. Report not indexed intensively.

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Author	Report Date	Title	Publishing Information	Comments
Reiter, M. and R. Smith.	1977	Subsurface temperature data in the Socorro Peak KGRA, New Mexico.	Geothermal Energy 5(10):37-42	Article reports data collected to investigate uplift in the Socorro area due to the presence of a deep underlying magma body; not related to hydrology of the area. Report not indexed intensively.
Reiter, M., C. Shearer, and C.L. Edwards.	1978	Geothermal anomalies along the Rio Grande rift in New Mexico.	Geology 6(2):85-88.	Article reports on investigation of geothermal anomalies in RG rift area; not related to hydrology of the area. Report not indexed intensively.
Renault, J., A.K. Armstrong, J.E. Repetski, and R.L. Oscarson.	1995	Geology, mineralogy, geochemistry, and geothermometry of Kelly Limestone jasperoids, Magdalena mining district, New Mexico.	Bulletin 152, New Mexico Bureau of Mines & Mineral Resources, Socorro, New Mexico.	
Robertson, J. M.	1976	Annotated Bibliography and Mapping Index of Precambrian New Mexico.	Bulletin 103. New Mexico Bureau of Mines and Mineral Resources.	Provides an index of Precambrian mapping for the counties comprising the planning area on page 77. Report not indexed intensively.
Robson, S.G., and E.R. Banta.	1995	Ground water atlas of the United States, Segment 2: Arizona, Colorado, New Mexico, Utah.	Hydrologic Investigations Atlas 730-C, U.S. Geological Survey, Reston, Virginia.	Loaned by John Hawley
Roybal, F. E.	1991	Ground-water resources of Socorro County, New Mexico.	Water-Resources Investigations Report 89-4083. U.S. Geological Survey.	Maps of groundwater quality
Sandeen, W.M.	1954	Geology of the Tularosa Basin, New Mexico.	In Guidebook of Southeastern New Mexico, Fifth Field Conference, October 21-22-23 & 24, 1954, New Mexico Geological Society.	Provides descriptions of the formations in the Tularosa Basin, not specifically related to hydrology.
Sanford, A. and W. Schlue.	1981	Groundwater circulation in the Socorro Geothermal Area, Part 3.	In Icerman, L., A. Starkey, and N. Trentman, eds., State-coupled low-temperature geothermal and resource assessment program, fiscal year 1980. Final Technical Report DOE/ID, 01717-2, 2/95-2/191 pp.	Not reviewed intensively, appears to fall within scope of Middle Rio Grande study.
Sanford, A.R.	1968	Gravity survey in central Socorro County, New Mexico.	Circular 91, State Bureau of Mines and Mineral Resources, New Mexico Institute of Mining and Technology, Socorro, New Mexico.	Provides as one general stratigraphic column, but reports results of geophysical work, not hydrology.



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Sargent, K.A., and M.S. Bedinger.	1985	Geologic and hydrologic characterization and evaluation of the Basin and Range Province relative to the disposal of high-level radioactive waste: Part II. Geologic and hydrologic characterization.	Circular 904-B. U.S. Geological Survey.	Use with SSWP 103. Report not indexed intensively.
Schwab, G.E., R.M. Colpitts, Jr., and W.K. Summers.	1981	Early Tertiary(?) strata penetrated in Jornada del Muerto.	New Mexico Geology 3(4):53.	Loaned by John Hawley
Seager, W.R., and G.H. Mack.	1995	Jornada Draw fault: A major Pliocene-Pleistocene normal fault in the southern Jornada Del Muerto.	New Mexico Geology 17(3):37-43.	Loaned by John Hawley
Seager, W.R., J.W. Hawley, F.E. Kottowski, and S.A. Kelley.	1987	Geology of east half of Las Cruces and northeast El Paso 1° x 2° sheets, New Mexico. Scale 1:125,000.	Geologic Map 57, New Mexico Bureau of Mines & Mineral Resources, Socorro, New Mexico.	Geologic and gravity maps and cross sections of southwestern Jornada del Muerto Basin including south-central Sierra County
Seager, W.R., R.E. Clemons, J.W. Hawley, and R.E. Kelley.	1982	Geology of northwest part of Las Cruces 1° x 2° sheet, New Mexico. Scale 1:125,000.	Geologic Map 53, New Mexico Bureau of Mines & Mineral Resources, Socorro, New Mexico.	Document not in hand. Geologic and gravity maps and cross sections of southwestern Jornada del Muerto Basin including south-central Sierra County
Siemers, W.T.	1978	The stratigraphy, petrology, and paleoenvironments of the Pennsylvanian system of the Socorro region, west-central New Mexico.	Ph.D. dissertation, New Mexico Institute of Mining and Technology, Socorro, New Mexico, August 1978. 259 p.	Usefulness constrained as topic is Pennsylvanian stratigraphy.
Simcox, A. C.	1983	The Rio Salado at flood.	pp. 325-328. In Chapin, C.E. and J.F. Callender (eds). Socorro Region II. New Mexico Geological Society Thirty-Fourth Annual Field Conference, October 13-15, 1983.	Report not indexed intensively.
Slate, J.L. (ed.).	1998	U. S. Geological Survey Middle Rio Grande Basin Study—Proceedings of the Second Annual Workshop, Albuquerque, New Mexico, February 10-11, 1998.	Open-File Report 98-337. U.S. Geological Survey, Denver, Colorado.	Good info, MRG study area. A quick scan didn't show any regional work pertaining to our scope.
Socorro Soil and Water Conservation District.	1999	Socorro-Sierra regional water plan, 1994 revision.		

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Author	Report Date	Title	Publishing Information	Comments
Sorauf, J.E.	1984	Devonian stratigraphy of the San Andres Mountains, Doña Ana, Sierra, and Socorro Counties, New Mexico.	Circular 189. New Mexico Bureau of Mines & Mineral Resources, Socorro, New Mexico	Report not indexed intensively.
Spiegel, Z.	1955	Geology and ground-water resources of northeastern Socorro County, New Mexico.	Ground-Water Report 4. State Bureau of Mines and Mineral Resources, New Mexico Institute of Mining & Technology, Socorro, New Mexico.	Not reviewed intensively, appears to fall within scope of Middle Rio Grande study.
Stephens, D.B., E. Hicks, and T. Stein.	1991	Field analysis of the role of three-dimensional moisture flow in ground-water recharge and evapotranspiration.	WRRI Report No. 260. New Mexico Water Resources Research Institute, Las Cruces, New Mexico.	
Stone, W.J.	1990	Index to NMGS guidebook papers on hydrology and related topics—40 years of water-resource information.	New Mexico Geology 12(1):8-14.	Not directly related, but useful index of all NMGS guidebook hydrology articles before 1990.
Stone, W.J. (compiler).	1984	Selected papers on water quality and pollution in New Mexico.	Hydrologic Report 7, New Mexico Bureau of Mines and Mineral Resources, Socorro, New Mexico.	Not reviewed intensively, appears to fall within scope of Middle Rio Grande study.
Stone, W.J. and N.B. Mizell.	1977	Geothermal resources of New Mexico -- A survey of work to date.	Technical Completion Report, New Mexico Energy Institute.	Not reviewed intensively, appears to fall within scope of Middle Rio Grande study.
Stone, W.J., N.H. Mizell, and J.W. Hawley.	1979	Availability of geological and geophysical data for the eastern half of the U.S. Geological Survey's southwestern alluvial basins, regional aquifer study, New	Open-File Report 109, New Mexico Bureau of Mines and Mineral Resources, Socorro, New Mexico.	Document not in hand. Useful index to geologic, geophysical, and hydrogeological reports on southwest New Mexico alluvial basins, including Socorro and Sierra Counties.
Summers, W.K., Geraldine E. Schwab and L.A. Brandvold.	1972	Ground-water characteristics in a recharge area, Magdalena Mountains, Socorro County, New Mexico.	Circular 124. New Mexico State Bureau of Mines and Mineral Resources, Socorro, New Mexico.	Groundwater recharge to deeper strata investigated by geochemical analyses; lithology and flow distance were found to have the greatest effect in the chemistry of the discharging water.
Sun, R.J. (ed.).	1986	Regional aquifer-system analysis program of the U.S. Geological Survey—Summary of projects, 1978-84.	Circular 1002. U.S. Geological Survey.	Groundwater recharge to deeper strata investigated by geochemical analyses; lithology and flow distance were found to have the greatest effect in the chemistry of the discharging water.
Tabet, D.E.	1979	Geology of Jornada del Muerto coal field, Socorro County, New Mexico.	Circular 168, New Mexico Bureau of Mines & Mineral Resources, Socorro, New Mexico.	

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Author	Report Date	Title	Publishing Information	Comments
Thompson, T.H., R. Chappell, and D.L. Hart, Jr.	1984	Maps showing distribution of dissolved solids and dominant chemical type in ground water, Basin and Range province, New Mexico.	Water-Resources Investigations Report 83-4118-C, U.S. Geological Survey.	
Tonking, W.H.	1957	Geology of Puertecito Quadrangle, Socorro County, New Mexico.	Bulletin 41, State Bureau of Mines and Mineral Resources, New Mexico Institute of Mining & Technology, Socorro, New Mexico.	Report not indexed intensively.
Trauger, F.D.	1960	Availability of ground water at proposed well sites in Gila National Forest, Sierra and Catron Counties, New Mexico.	Technical Report 18, New Mexico State Engineer Office, Santa Fe, New Mexico.	
U.S. Geological Survey.	1979	Geological Survey research 1979 (excerpts regarding NM hydrology, geology or geophysics).	Geological Survey Professional Paper 1150, U.S. Geological Survey.	Not reviewed intensively, appears to fall within scope of Middle Rio Grande study.
U.S. Geological Survey.	1980	Geological Survey Research 1980 (excerpts regarding NM hydrology, geology or geophysics).	Geological Survey Professional Paper 1175, U.S. Geological Survey.	Areas described are outside of planning region. Report not indexed intensively.
U.S. Geological Survey.	1981	Geological Survey Research, Fiscal Year 1981 (excerpts regarding NM hydrology, geology or geophysics).	Geological Survey Professional Paper 1375, U.S. Geological Survey.	Areas described are outside of planning region. Report not indexed intensively.
Von Buttlar, H.	1959	Ground-water studies in New Mexico using tritium as a tracer, II.	Jour. Geophys. Res. 64(8):1031-1038.	Areas described are outside of planning region. Report not indexed intensively.
Von Buttlar, H. and I. Wendt.	1958	Ground-water studies in New Mexico using tritium as a tracer.	Trans. Am. Geophys. Union 39(4):660-668.	Areas described are outside of planning region. Report not indexed intensively.
Waldron, J.R.	1956	Reconnaissance geology and ground water study of a part of Socorro County, New Mexico.	Ph.D. dissertation, Stanford University, Palo Alto, California, 255 p.	Not reviewed intensively, appears to fall within scope of Middle Rio Grande study.
Weber, R.H.	1957	Geology and petrography of the Stendel perlite deposit, Socorro County, New Mexico.	Circular 44, New Mexico Institute of Mining and Technology, State Bureau of Mines and Mineral Resources, Socorro, New Mexico.	Report not indexed intensively, not related to hydrology.
Weir, J.E. Jr.	1965	Geology and availability of ground water in the northern part of the White Sands Missile Range and vicinity, New Mexico.	Geological Survey Water-Supply Paper 1801. U.S. Department of the Interior Geological Survey.	CSEL's copy didn't contain Plate 1, which is indicated to show water level contours and geology of the study area.
White, W.E., and G.E. Kues.	1992	Inventory of springs in the state of New Mexico.	Open-File Report 92-118, U.S. Geological Survey, Albuquerque, New Mexico.	Provides list of springs in the planning region

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Author	Report Date	Title	Publishing Information	Comments
Wilkins, D.W.	1984	Geology and hydrology of the Rio Grande Rift area.	pp. 598-605. In Replogle, J.A. and K.G. Renard (eds.), Water Today and Tomorrow. Proceedings, American Society of Civil Engineers Irrigation and Drainage Division Specialty Conference, Flagstaff, Arizona, July 24-26, 1984	Most likely area falls to scope of the Middle Rio Grande study but some regional info may be included.
Wilkins, D.W.	1986	Geohydrology of the southwest alluvial basins regional aquifer-systems analysis, parts of Colorado, New Mexico, and	Water-Resources Investigations Report 84-4224. U.S. Geological Survey, Albuquerque, New Mexico.	Good general descriptions of San Agustin, Jornada del Muerto, Mimbres and Tularoso basins.
Wilkins, D.W.	1986	Southwest alluvial-basin regional aquifer-systems study: Study in parts of Colorado, New Mexico, and Texas.	pp. 107-115 In Sun, R.J. (ed.), Regional aquifer-system analysis program of the U.S. Geological Survey—Summary of projects, 1978-84. Circular 1002. U.S. Geological Survey.	
Wilkins, D.W. and B.M. Garcia.	1995	Ground-water hydrographs and 5-year ground-water-level changes, 1984-93, for selected areas in and adjacent to New Mexico.	Open-File Report 95-434, U.S. Geological Survey, Albuquerque, New Mexico.	Hard copy tabulation of the GWSI data WRR1 has provided to us in digital format. Includes hydrographs for selected wells.
Wilson, B.C.	1992	Water use by categories in New Mexico counties and river basins, and irrigated acreage in 1990.	Technical Report 47. New Mexico State Engineer Office, Santa Fe, New Mexico. July 1992.	See TR49 for most recent version of this report.
Wilson, B.C., and A.A. Lucero.	1997	Water use by categories in New Mexico counties and river basins, and irrigated acreage in 1995.	Technical Report 49. New Mexico State Engineer Office, Santa Fe, New Mexico. September 1997	Does not contain hydrologic analysis, but does provide other useful data.
Wilson, L.	1981	Potential for ground-water pollution in New Mexico.	In Wells, S.G. and W. Lambert (eds.) Environmental Geology and Hydrology in New Mexico. New Mexico Geological Society, Special Publication No. 10.	
Winchester, D.E.	1921	Geology of Alamosa Creek Valley, Socorro County, New Mexico, with special reference to the occurrence of oil and gas.	pp. 1-15. In White, D. and M.R. Campbell (eds). Contributions to Economic Geology, 1920: Part II. Mineral Fuels, USGS Bulletin 716.	Provides lists of springs in the area on page 3, and several stratigraphic sections. Does not provide any hydrology, so not indexed.
Wright, A. F.	1980	Bibliography of Geology and Hydrology, Southwestern New Mexico.	Water Resources Investigations Report 80-20. U.S. Geological Survey	Provides a hard-copy bibliography of reports through December 1978, listed by author. Not searchable.



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Citation	Annotation
Anderholm, S.K. 1984. <i>Hydrogeology of the Socorro and La Jencia Basins, Socorro County, New Mexico</i> . Water-Resources Investigations Report 84-4342. U.S. Geological Survey.	The Socorro and La Jencia Basins were chosen to be studied in detail because of the opportunity to investigate the hydraulic connection between an open basin (Socorro) and a partly closed basin (La Jencia). The purpose of this study was to (1) develop a database that contained both well completion and water quality information, (2) describe the hydrogeology of the area, and (3) identify additional data needs. The principal aquifer system in the Socorro and La Jencia Basins is composed of the Quaternary and Tertiary Santa Fe Group (Popotosa and Sierra Ladrones Formations) and Quaternary deposits. Rio Grande flow is discussed. Mountain front recharge estimates are provided (p. 24, 49). Water budget calculations are presented. "In the northern part of the basin, groundwater flows to La Jencia Creek. In the Nogal Canyon-Snake Ranch Flats area, the water levels indicate that water flows eastward out of La Jencia Basin and into the Socorro Basin." (p. 25).
Anderholm, S.K. 1988. <i>Ground-Water Geochemistry of the Albuquerque-Belen Basin, Central New Mexico</i> . Water-Resources Investigations Report 86-4094. U.S. Geological Survey, Albuquerque, New Mexico.	The report presents an overview of the groundwater geochemistry of the Albuquerque-Belen Basin. The southern part of the Basin extends into Socorro County, within the Papadopulos study area. The focus of the report is groundwater quality. <sup>a</sup>
Blodgett, D.D. and F.B. Titus. 1973. <i>Hydrogeology of the San Augustin Plains, New Mexico</i> . Open File Report 51, New Mexico Bureau of Mines and Mineral Resources, Socorro, New Mexico.	This report summarizes the hydrogeology of the San Augustin Plains, the floor of a closed basin in Socorro and Catron County. The Plains are nearly flat at approximately 6,900 feet elevation. Thick sequences of Tertiary volcanic flows form the uplands that surround the basin floor. A water table contour map shows hydrologic conditions that suggest southward subsurface leakage from the southwestern portion of the basin. A hydrologic budget estimated annual groundwater leakage at about 100,000 acre-feet. Chemically analyzed water samples are mostly of the mixed-cation bicarbonate type. Comparison of these analyses with water analyses from known lithologic associations suggests that the water chemistry is a result of contact with rhyolitic rocks.

<sup>a</sup> Relevant to water resources in Socorro and Sierra Counties, but the geographic coverage better relates to the SSPA study area.



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Citation	Annotation
<p>Bowers, R.L. 1990. <i>Geology, hydrology, and associated potential environmental impacts of the Aerial Cable Test Capability (ACTC) Project, White Sands Missile Range, New Mexico</i>. Physical Science Laboratory, New Mexico State University.</p>	<p>This report provides a general overview of geologic and hydrologic features in the White Sands area. The primary objective of the study was to identify potential impacts on the geological and hydrological aspects of the local environment from the proposed construction and operation of the ACTC system. Regarding the Jornada del Muerto, the report indicates that</p> <p>“Unlike most of the basins in the Basin and Range province which are grabens, the Jornada del Muerto is a syncline. Formations exposed in the bounding ranges on both sides of the basin generally dip into the basin.” (p. 6).</p> <p>The report also states that available subsurface data for the valley indicate that Quaternary alluvium probably has a maximum thickness of 400 feet and overlies Tertiary formations (including the Santa Fe Group and the Datil Formation) having a total thickness of less than 1000 feet.</p>
<p>Brown, L.D., P.A. Krumhansl, C.E. Chapin, A.R. Sanford, F.A. Cook, S. Kaufman, J.E. Oliver, and F.S. Schilt. 1979. COCORP seismic reflection studies of the Rio Grande rift. pp. 169-184. In Riecker, R.E. (ed.) <i>Rio Grande Rift: Tectonics and Magmatism</i>. American Geophysical Union, Washington, D.C.</p>	<p>During 1975 and 1976, the Consortium for Continental Reflection Profiling (COCORP) mapped deep structure in the Rio Grande Rift by seismic reflection surveys near Socorro, New Mexico. The results of these surveys indicate that (1) the shallow basement beneath the Albuquerque Basin is disrupted by faults, and (2) a large buried intragaben horst separates the Monte Largo embayment from the rest of the Albuquerque Basin. Other conclusions pertaining to the rift boundaries and inferred magma bodies are presented.<sup>a</sup></p>
<p>Burkholder, J.L. 1928. <i>Report of the Chief Engineer, submitting a plan for flood control, drainage and irrigation of the Middle Rio Grande Conservancy Project, Volume I: The official plan</i>. State of New Mexico Middle Rio Grande Conservancy District. 248 p.</p>	<p>This report was prepared for the purpose of outlining a plan for flood control, drainage and irrigation of the Middle Rio Grande Conservancy Project. Water supply information such as evaporation and consumptive use is included but, due to the date of the report, is probably not relevant to a current water budget. The report includes information on the early history of the area.<sup>a</sup></p>

<sup>a</sup> Relevant to water resources in Socorro and Sierra Counties, but the geographic coverage better relates to the SSPA study area.



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Citation	Annotation
Chapin, C.E., R.B. Blakestad, and W.T. Siemers. 1975. Geology of the Magdalena area. pp. 43-49. In Callender, J.F., and R.E. Zilinski (eds), <i>Field trips to central New Mexico: Part 2. Pennsylvanian stratigraphy, structure, and petroleum geology of a portion of central New Mexico</i> . Annual American Association of Petroleum Geologists, Society of Economic Paleontologists and Mineralogists Rocky Mountain Sections Meeting, Albuquerque, New Mexico, June 1-4, 1975.	This document is a summary paper describing the geology of the Magdalena area, including a stratigraphic column and map.
Davie, W. Jr., and Z. Spiegel. 1967. <i>Las Animas Creek hydrographic survey report, geology and water resources of Las Animas Creek and vicinity, Sierra County, New Mexico</i> . New Mexico State Engineer Office.	This is a hydrographic survey covering the Las Animas and Seco Creek area in central Sierra County. The drainage basin originates in the Black Range of western Sierra County and extends eastward to the Rio Grande. The report includes good geologic descriptions, well inventories (dated), and water level contours. The information presented indicates that groundwater (alluvial and Santa Fe Group) in the area is connected to surface water, discharging as springs or to the Creek. The report discusses water level fluctuations resulting from Caballo Reservoir.
Harley, G.T. 1934. <i>The geology and ore deposits of Sierra County, New Mexico</i> . Bulletin 10, New Mexico Bureau of Mines and Mineral Resources.	This bulletin provides detailed descriptions of the geology of each of the mining districts within Sierra County. Page 21 describes in detail the geology of the Jornada del Muerto. The Jornada del Muerto is a nearly level detrital valley plain 10 to 20 miles in width, extending from the latitude of Socorro to Las Cruces and bounded on the east by the San Andres Range and on the west by the Caballos and Fra Cristobal Ranges.
Kelley, V.C. and C. Silver. 1952. <i>Geology of the Caballo Mountains</i> . UNM Publications in Geology No. 4. University of New Mexico Press, Albuquerque, New Mexico.	The focus of this publication is stratigraphic and structural features of the Caballo Mountains. One chapter on groundwater is included. A brief discussion of groundwater resources in Las Palomas Valley (Elephant Butte to Rincon) and the Truth or Consequences area is presented (both areas are outside the scope of the Socorro-Sierra Regional Water Plan study). In the Jornada del Muerto, water occurs as unconfined groundwater in local alluvial fans and topographic basins and as confined groundwater under artesian pressure in the McRae, Mesaverde, Dakota, and older formations.

<sup>a</sup> Relevant to water resources in Socorro and Sierra Counties, but the geographic coverage better relates to the SSPA study area.



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Citation	Annotation
McLean, J.S. 1970. <i>Saline ground-water resources of the Tularosa Basin, New Mexico</i> . U.S. Geological Survey. June 1970.	<p>This report describes the location, extent, and quality of saline groundwater in the Tularosa Basin, a north-trending, elongated, intermontane desert basin in south-central New Mexico. There are no through-flowing streams; runoff from the bordering mountains flows to ephemeral lakes in the center of the basin. Freshwater supplies in the Tularosa Basin are limited; however, large volumes of saline groundwater underlie most of the basin. The focus of the report is to describe and quantify saline resources.</p> <p>The most widely developed aquifer in the basin is the alluvial fill, which exceeds 6,000 feet in thickness in the southern part of the basin. Well yields of as much as 1,400 gpm have been measured. Fresh water lenses occur in the alluvial fill adjacent to the mountains on the east and west sides of the southern part of the basin. The salinity of the water below the freshwater lenses in the alluvial fill increases with depth. Salinity also increases toward the center of the basin.</p>
Munroe, Erik A. 1999. <i>Geology and geochemistry of waste rock piles in the Hillsboro mining district, Sierra County, New Mexico</i> . M.S. thesis, New Mexico Institute of Mining and Technology.	<p>This report presents the results of a mineralogical and geochemical study of four mine waste rock piles and their drainage systems in the Hillsboro mining district. The study was implemented to better understand the environmental consequences of metal mobility in regions of minimal precipitation. The Hillsboro mining district is located in the Animas Mountains in the eastern Black Range (southwest of Truth or Consequences). General climatic conditions are discussed. A Piper diagram of waters in the district is included.</p>
Murray, C.R. 1959. <i>Ground-water conditions in the nonthermal artesian-water basin south of Hot Springs, Sierra County, New Mexico</i> . Technical Report 10. New Mexico State Engineer Office, Santa Fe, New Mexico.	<p>The report presents information on groundwater conditions on the west side of the Rio Grande, south of Truth or Consequences. The report includes pump test data, general water quality information, lithologic logs, and a well inventory. The abstract states "Water is believed to enter the aquifers west of the area of artesian development, to flow through the aquifers toward the Rio Grande, and to be discharged indirectly to the river. . . ." (p. 1). The report later states "Recharge directly from rainfall probably takes place largely in the area between the Hillsboro-Cuchillo Mountains and the area of artesian-water development." (p.19)<sup>a</sup></p>

<sup>a</sup> Relevant to water resources in Socorro and Sierra Counties, but the geographic coverage better relates to the SSPA study area.





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Citation	Annotation
Myers, R.G., J.T. Everheart, and C.A. Wilson. 1994. <i>Geohydrology of the San Agustin Basin, Alamosa Creek Basin upstream from Monticello Box, and upper Gila Basin in parts of Catron, Socorro, and Sierra Counties, New Mexico</i> . Water-Resources Investigations Report 94-4125. U.S. Geological Survey, Albuquerque, New Mexico.	This report includes all data collected during the study referenced in the report title. Aquifer tests were conducted on most of the large production wells in the San Agustin aquifer. There are four major aquifers in the study area: (1) the Bolson-fill aquifer in the San Agustin Basin, (2) the Datil aquifer extending throughout the study area, (3) the shallow upland aquifers located throughout the higher parts of the study area, and (4) the Alamosa Creek shallow aquifer in the Alamosa Creek Basin. Some other geologic units are known to yield small quantities of water to wells in the study area.
Orr, B.R. and R.G. Myers. 1986. <i>Water resources in basin-fill deposits in the Tularosa Basin, New Mexico</i> . Water-Resources Investigations Report 85-4219. U.S. Geological Survey, Albuquerque, New Mexico.	This publication presents an overview of the water resources of basin-fill deposits in the Tularosa Basin. Saline groundwater is present in much of the basin. Fresh water is present on the eastern side of the basin (outside of the Socorro-Sierra planning region) and in alluvial fans in the vicinity of Rhodes Canyon (eastern Sierra County). Geophysical data indicate that the freshwater zone may be as thick as 1,500 feet, but the sparcity of wells precludes a precise definition of the volume of freshwater in storage.
Osburn, G.R. 1984. <i>Socorro County Geologic Map</i> . Open File Report 238, New Mexico Bureau of Mines & Mineral Resources, Socorro, New Mexico.	This document presents a detailed geologic map of Socorro County with corresponding descriptions of each of the mapped units.
Roybal, F. E. 1991. <i>Ground-water resources of Socorro County, New Mexico</i> . Water-Resources Investigations Report 89-4083. U.S. Geological Survey.	This document presents the results of an investigation of Socorro County groundwater resources. The study covered groundwater connected to the Rio Grande, as well as groundwater in three topographically closed basins that are partially present in the county: the San Agustin Basin, the Jornada del Muerto Basin, and the Tularosa Basin. The report includes background information on the county, detailed geologic descriptions, mountain front recharge estimates, some water use information, water quality data, and maps illustrating water quality conditions.

<sup>a</sup> Relevant to water resources in Socorro and Sierra Counties, but the geographic coverage better relates to the SSPA study area.



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Citation	Annotation
<p>Waldron, J.R. 1956. <i>Reconnaissance geology and ground water study of a part of Socorro County, New Mexico</i>. Ph.D. dissertation, Stanford University, Palo Alto, California, 255 p.</p>	<p>Waldron's study area encompassed about 250 square miles of Socorro County. His study area was bounded on the west by the Magdalena Mountains, on the east by the Rio Grande, on the north by La Hincia (La Jencia) Creek, and on the south by Sedillo Arroyo. Away from the Rio Grande Basin, the area depends upon groundwater for a water supply.</p> <p>The two basins Waldron describes in terms of groundwater occurrence are the Rio Grande and Snake Ranch Flats. The latter basin, which is bounded by the Magdalena Mountains to the south and west (according to his site map [p. 4]), is directly south of the Rio Salada Basin. Waldron describes migration of water from the recharge area (Magdalena Mountains and, to a lesser extent, the Lemitar Mountains) to the Snake Ranch Flats Basin. He also describes that this basin discharges surficially and subsurficially to the La Hincia (La Jencia) Basin (pp. 120,123) and that the Socorro-Lemitar mountains are a partial barrier to groundwater migration from the Snake Ranch Flats Basin to the Rio Grande Basin (p. 231).</p> <p>Waldron provides a detailed interpretation of water quality parameters of both basins. The report also includes well completion and lithology tables, a geologic map, physiography and potentiometric maps, and areal descriptions of estimated potentiometric surfaces (p. 129).</p>
<p>Wilkins, D.W. 1986. <i>Geohydrology of the southwest alluvial basins regional aquifer-systems analysis, parts of Colorado, New Mexico, and Texas</i>. Water-Resources Investigations Report 84-4224. U.S. Geological Survey, Albuquerque, New Mexico.</p>	<p>The Southwest Alluvial Basins study is part of a USGS program to systematically study aquifer systems at a regional scale. The objectives of the program are to (1) describe the water resource system, (2) analyze changes in the system, (3) develop a database of existing information and (4) simulate the hydrologic system using mathematical models. The area encompasses parts of Colorado, New Mexico, and Texas, and is divided into 22 surface-water open and closed basins. Much of the report focuses on the Rio Grande area, but good descriptions of the San Agustin, Jornada del Muerto, and Mimbres Basins are also included. Regional water level and water quality maps are provided (but no local or basin specific maps).</p>

<sup>a</sup> Relevant to water resources in Socorro and Sierra Counties, but the geographic coverage better relates to the SSPA study area.