

Bibliography of Critical Minerals in Kansas

Reference	Critical Mineral	Group	Member	Kansas
Al-Janabi, S.A.A., 2017, Metals hosts in Pennsylvanian Hushpuckney and Stark black shales from selected areas in Kansas City. Unpublished Ph.D. Dissertation, University of Missouri-Kansas City, 151 p.	Al, Co, La (REE), Sb, Sc, Ti, V	Kansas City	Hushpuckney, Stark	Yes
Allen, G.T., Blackford, S.H., Tabor, V.M., and Cringan, M.S., 2001, Metals, boron, and selenium in Neosho madtom habitats in the Neosho River in Kansas, USA: Environmental Monitoring and Assessment, v. 66, no. 1, p. 1–21.	Be, Mn	[Water]		Yes
Andrews, W.J., Becker, M.F., Mashburn, S.L., and Smith. S.J., 2009, Selected metals in sediments and streams in the Oklahoma part of the Tri-State mining district: U.S. Geological Survey Scientific Investigations Report SIR 2009-5032, 36 p.	Al	[Water]		No
Bailey, E.H., 1902, Special report on mineral waters: W. Y. Morgan, State Printer, Topeka, 217–247 p.	Li, Mg	[Water] Sub- and Lower Carboniferous strata		Yes
Bass, N.W., 1926, Geologic investigations in western Kansas, with special reference to oil and gas possibilities, Kansas Geological Survey Bulletin 11, Lawrence, KS.	Potash	Sumner		Yes
Berendsen, P. and Hathaway, L.R., 1981. Uranium in unconsolidated aquifers of western Kansas: Kansas Geological Survey. Mineral Resources Series, 9, p.43.	U	Ogallala Formation		Yes
Berendsen, P., and Weis, T., 2001, New Kimberlite Discoveries in Kansas: Magnetic Expression and Structural Setting: Transactions of the Kansas Academy of Science (1903-), v. 104, no. 3/4, p. 223–236.	Ti	Council Grove/Chase	Blue Spring Shale	Yes
Brady, L.L., and Hatch, J.R., 1997, Chemical Analyses of Middle and Upper Pennsylvanian Coals from Southeastern Kansas, Current Research in Earth Sciences: Kansas Geological Survey Bulletin 240-4, 52-55 p.	As, Be, Bi, Mn, Sr	Cherokee		Yes
Brookins, D.G., 1970, Factors governing emplacement of Riley County, Kansas, kimberlites: Kansas Geological Survey Bulletin 199, Kansas Geological Survey, Lawrence.	Ti	Chase		Yes

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Brookins, D.G., 1970, The kimberlites of Riley County, Kansas: Kansas Geological Survey Bulletin 200, Kansas Geological Survey, Lawrence.	Ti	Chase		Yes
Buchanan, R., Tolsted, L.L., and Swineford, A., 1986, Kansas rocks and minerals: Kansas Geological Survey Educational Series 2, 44 p.	Ba	Montana/Colorado/Dakota	Pierre Shale/Niobrara Chalk/Kiowa Shale	Yes
Bureau of Mines, 1980, Minerals yearbook: Metals and minerals 1980, U.S. Government Printing Office, Washington D.C., 950 p.	Al, As, Sb, Ba, Be, Bi, Ce, Cr, Co, Fluorspar, Ga, Ge, Graphite, He, Li, Mg, Mn, Pt, Potash, REE, Re, Sr, Ta, Te, Sn, Ti, W, U, V, Zr	Various		Yes
Coveney, R.M., 1999, Contributions from Migrating Oil-Field Brines to Carboniferous Beds in the U.S. Midwest, in 1999 AAPG Midcontinent Section Meeting – American Association of Petroleum Geologists, p. 29–34.	Ba	Kansas City	Winterset Limestone	Yes
Coveney, R.M., Goebel, E.D., Zeller, E.J., and Dreschhoff, G.A.M., 1987, Serpentinization and the Origin of Hydrogen Gas in Kansas: AAPG Bulletin, v. 71, no. 1, p. 39–48.	Graphite	peridotites in Woodson County		Yes
Coveney, R.M., Leventhal, J.S., Glascock, M.D., and Hatch, J.R., 1987, Origins of metals and organic matter in the Mecca Quarry Shale Member and stratigraphically equivalent beds across the Midwest. Economic Geology, v. 82, pp. 915-933.	Mo, REE, TOC, V, U	Cherokee		Yes
Cruse, A.M., 1997, Geochemical trends in the Hushpuckney Shale (Pennsylvanian), Midcontinent U.S.A.: A record of dynamic anoxia. M.S. Thesis, University of Missouri, Columbia, 112 p.	Al, As, Co, Cr, Cs, Hf, Mg, Mn, Rb, Sb, Sc, Sr, Ta, Ti, U, V, REE	Kansas City	Hushpuckney, upper Tacket	Yes

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Cruse, A.M., and Lyons, T.W., 2004, Trace metal records of regional paleoenvironmental variability in Pennsylvanian (Upper Carboniferous) black shales. <i>Chemical Geology</i> , v. 206, pp. 319-345.	Al, Mo, TOC, V, U	Kansas City		No
Cruse, A.M., Lyons, T.W., and Kidder, D.L., 2000, Rare-earth element behavior in phosphates and organic-rich host shales: An example from the upper Carboniferous of midcontinent North America. <i>SEPM Special Publication</i> , n. 6, pp. 445-453.	REE, TOC	Kansas City/Lansing		Yes
Cubitt, J.M., 1979, The geochemistry, mineralogy, and petrology of upper Paleozoic shales of Kansas: <i>Kansas Geological Survey Bulletin</i> 217.	Ba, Be, Bi, Ge, Mn	Kansas City/Council Grove	Canville Limestone, Hushpuckney Shale/Speiser	Yes
Cullers, R.L., and Berendsen, P., 2011, Mineralogical and Chemical Evolution of Lamproites in Woodson and Wilson Counties, Southeastern Kansas: <i>Kansas Geological Survey Technical Series</i> 23.	Ba, Li, Mg, Ti	lamproites in Woodson County and Wilson County		Yes
Cullers, R.L., and Berendsen, P., 2012, The Geology, Petrology, and Elemental Composition of Kimberlites from Riley and Marshall Counties, Kansas, USA: <i>Kansas Geological Survey Kansas Geological Survey Open-file Report</i> 2012-17.	Ti	Chase		Yes
Denne, J.E., 1998, Hydrogeology and geochemistry of glacial deposits in Northeastern Kansas, <i>Kansas Geological Survey Bulletin</i> 229, p. 923-936.	Mn	Glacial deposits		Yes
Desborough, G.A., Hatch, J.R., and Leventhal, J.S., 1989, Geochemical and Mineralogical Comparison of the Upper Pennsylvanian Stark Shale member of the Dennis Limestone, East-Central Kansas, with the Middle Pennsylvanian Mecca Quarry Shale Member of the Carbondale Formation in Illinois and of the Linton Formation in Indiana, <i>in</i> : Grauch, R.I., and Huyck, H.L., (Ed), <i>Metalliferous black shales and related ore deposits--Proceedings, 1989 United States working group meeting, International Geological Correlation Program Project 254, USGS Circular</i> 1058, pp. 10-30.	Al, Mo, TOC, U, V	Kansas City		Yes
Driskill, DL, 2008. <i>Analyses of Natural Gases, 2005-2007. BLM Technical Note</i> 427	He	various		Yes

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Reference	Critical Mineral	Group	Member	Kansas
Dubois, M.K., Byrnes, A.P., and Bhattacharya, S., 2003, Understanding Mississippi Dolomite Reservoirs in Central Kansas, Kansas Geological Society Meeting.	Mg	Mississippian		Yes
Elias, M.K., 1931, The geology of Wallace county, Kansas: Kansas Geological Survey Bulletin 18, 58-72 p.	Ba	Montana	Sharon Springs shale	Yes
Emsbo, P., McLaughlin, P.I., Breit, G.N., du Bray, E.A., and Koenig, A.E., 2015, Rare earth elements in sedimentary phosphate deposits—Solution to the global REE crisis?: Gondwana Research, v. 27, pp. 776–785.	REE	Summary		Yes
Emsbo, P., McLaughlin, P.I., du Bray, E.A., Anderson, E.D., Vandenbrouke, Thijs, and Zielinski, R.A., 2016, Rare earth elements in sedimentary phosphorite deposits — a global assessment, <i>in</i> Verplanck, P.L. and Hitzman, M.W., eds., Rare earth and critical elements in ore deposits: Society of Economic Geologist, v. 18, pp. 101–113.	REE	Summary		Yes
Farquhar, O.C., 1957, The Precambrian rocks of Kansas: Kansas Geological Survey Bulletin 127, pt. 3, Kansas Geological Survey, Lawrence.	Graphite	Precambrian	Metasediment	Yes
Galle, O.K., and Angino, E.E., 1968, Trace Elemental Analysis of Freshwater by Atomic Absorption: Kansas Geological Survey Bulletin 191-1.	Co, Li, Mn, Sr	[Water]		Yes
Gregg, J.M., and Shelton, K.L., 2012, Mississippi Valley-type Mineralization and Ore Deposits in the Cambrian–Ordovician Great American Carbonate Bank, in The great American carbonate bank: The geology and economic resources of the Cambrian–Ordovician Sauk megasequence of Laurentia: AAPG, p. 161–185.	Ba, CaF2	Middle Mississippian	Keokuk Limestone/Warsaw Limestone	Yes
Grynia, E., and Peter J. Griffin, P.J., 2016, J. Natural Gas Eng., Vol. 1, No. 2	He	Various		Yes

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Reference	Critical Mineral	Group	Member	Kansas
Hambleton, W.W., 1953, Petrographic study of southeastern Kansas coals, Kansas Geological Survey Bulletin 102-1, 76 p.	Ge	Mississippian		Yes
Harbaugh, J.W., 1964, Use of Factor Analysis in Recognizing Facies Boundaries, AAPG Bulletin	Ti	Council Grove/Chase		Yes
Hatch, J.R., and Leventhal, J.S., 1992, Relationship between inferred redox potential of the depositional environment and geochemistry of the Upper Pennsylvanian (Missourian) Stark Shale Member of the Dennis Limestone, Wabaunsee County, Kansas, USA. Chemical Geology, v. 99, pp. 65-82.	Al, Mo, TOC, V, U	Kansas City		Yes
Hatch, J.R., and Leventhal, J.S., 1997, Early diagenetic partial oxidation of organic matter and sulfides in the Middle Pennsylvanian (Desmoinesian) Excello Shale Member of the Fort Scott Limestone and equivalents, northern Midcontinent region, USA. Chemical Geology, v. 134, pp. 215-235.	Al, Mo, TOC, V, U	Marmaton		Yes
Heyl, A.V., 1968, Minor epigenetic, diagenetic, and syngenetic sulfide, fluorite, and barite occurrences in the central United States: Economic Geology, v. 63, no. 6, p. 585-594.	Ba, CaF ₂	Cherokee		Yes
Holdoway, K.A., 1978, Deposition of evaporites and red beds of the Nippewalla Group, Permian, Western Kansas, Kansas Geological Survey Bulletin 215.	Potash	Nippewalla		Yes
Hussein, R.A.M., 1992, Origin, Distribution, and Petrology of Upper Pennsylvanian Phosphate Nodules from Oklahoma and Texas. Unpublished Masters Thesis, Ohio University, 89 p.				No
Jakosky, J.J., 1942, Geophysical investigations in the Tri-state zinc and lead mining district: Kansas Geological Survey Bulletin 44, Kansas Geological Survey, Topeka, 84-88 p.	Sn	Mississippian Limestone		Yes

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Reference	Critical Mineral	Group	Member	Kansas
James, G.W., 1978, Uranium and thorium in volcanic ash deposits of Kansas: Implications for uranium exploration in the central Great Plains, Kansas Geological Survey, Bulletin 211, Part 4, p. 1-3	U, Th	Ogallala Formation		Yes
Jewett, J.M., Schoewe, W.H., Dreyer, R.M., Frye, J.C., Keroher, R.P., Kinney, E.D., Plummer, N., and Romary, J.F., 1942, Kansas mineral resources for wartime industries: Kansas Geological Survey Bulletin 41, 99-103 p.	Al, ...	Dakota		Yes
Johnson, W.D., and Wagner, H.C., 1967, Geology of Western Shawnee County, Kansas, and Vicinity: Kansas Geological Survey Bulletin 1215-B.	Ba	Wabaunsee/Council Grove	Friedrich Shale, Tarkio Limestone, Elmont Limestone, Reading Limestone/Foraker Limestone	Yes
Ketcheside, W.D., 2016, Using geochemistry and strontium isotopic ratios ($^{87}\text{Sr}/^{86}\text{Sr}$) to determining water mixing and sources in the Picher Mining District. M.S. Thesis, University of Arkansas, Little Rock, 12-13 p.	Al, Sr	[Water]		No
Kidder, D.L., and Eddy-Dilek, C.A., 1994, Rare-earth element variation in phosphate nodules from midcontinent Pennsylvanian cyclothem. Journal of Sedimentary Research, v. A64, n. 3, pp. 584-592.	REE	Marmaton/Pleasanton/Kansas City		Yes
Kidder, D.L., Krishnaswamy, R., and Mapes, R.H., 2003, Elemental mobility in phosphatic shales during concretion growth and implications for provenance analysis. Chemical Geology, v. 198, pp. 335-353.	REE	Marmaton/Pleasanton/Kansas City/Lansing/Shawnee		Yes
Kinney, E.D., 1943, A process for extracting alumina from Kansas clay: Kansas Geological Survey Bulletin 47, 4 p.	Al	Dakota		Yes
Kinney, E.D., 1952, Amenability of certain Kansas clays to alumina extraction by the lime-sinter process: Kansas Geological Survey Bulletin 96, 7 p.	Al	Dakota		Yes

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Reference	Critical Mineral	Group	Member	Kansas
Kulstad, R.O., 1959, Thickness and Salt Percentage of the Hutchinson Salt, Kansas Geological Survey Bulletin 137.	Potash	Sumner		Yes
Lee, W., 1944, McLouth gas and oil field, Jefferson and Leavenworth counties, Kansas: Kansas Geological Survey Bulletin 53, Kansas Geological Survey, Lawrence, 83-116 p.	Ti, Zr	Cherokee	McClouth Sandstone	Yes
Leonard, R.B., 1975, Changes In Chemical Quality of Water, Cedar Bluff Irrigation District Area, West-Central Kansas: Kansas Geological Survey Chemical Quality Series 1, 37-38 p.	Be	[Water]		Yes
Macfarlane, P.A., 1987, The hydrogeology and chemical quality of ground waters from the lower Paleozoic aquifers in the Tri-State region of Kansas, Missouri, and Oklahoma: Open-file Report 81-16, Kansas Geological Survey, Lawrence.	Li, Mg	Upper Cambrian/ Lower Ordovician		Yes
Mastalerz, M., Drobnik, A., Eble, C., Ames, P., and McLaughlin P., 2019, Application of pXRF elemental analysis and organic petrography in correlation of Pennsylvanian strata: An example from the Indiana part of the Illinois Basin, USA. International Journal of Coal Geology, v. 216, pp. 1-12.	REE	Cherokee		No
Mastalerz, M., Drobnik, A., Eble, C., Ames, P., and McLaughlin P., 2020, Rare earth elements and yttrium in Pennsylvanian coals and shales in the eastern part of the Illinois Basin. International Journal of Coal Geology.	REE	Cherokee		No
McCauley, J., Sawin, B., Buchanan, R., and Brosius, L., 2003, Geology of the Kanopolis Lake Area: Kansas Geological Survey Open-file Report 2003-52, 2, 7 p.	Ba	Dakota	Kiowa	Yes
Merriam, D.F., Atkinson, W.R., Franks, P.C., Plummer, N., and Preston, F.W., 1959, Description of a Dakota (Cretaceous) core from Cheyenne County, Kansas: Kansas Geological Survey Bulletin 134-1, 78-86 p.	Ba	Dakota	Cheyenne Sandstone	Yes
Newell, K.D., Corsair, S., Chafin, S. and Pennybaker, K., 2003. Low-BTU Gas in the Permian Chase Group in the Ryersee Field in Western Kansas: A Case History Where Technology Creates a Marketable Commodity. AAPG Annual Conference Abstract.	He	Chase		Yes

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Reference	Critical Mineral	Group	Member	Kansas
Plummer, N., Swineford, A., Runnels, R.T., and Schleicher, J.A., 1954, Chemical, Petrographic, and Ceramic Properties of Four Clays from the Dakota Formation in Kansas: Kansas Geological Survey Bulletin 109-10.	Cr, Ga, Mn, V	Dakota		Yes
Plummer, N., Bauleke, M.P., and Hladik, W.B., 1960, Dakota formation refractory clays and silts in Kansas: Kansas Geological Survey Bulletin 142, 1 p.	Al	Dakota	Terra Cotta Clay/Janssen Clay	Yes
Plummer, N., and Romary, J.F., 1947, Kansas clay, Dakota Formation: Kansas Geological Survey Bulletin 67, p. 236-238.	Al	Dakota		Yes
Pope, L.M., 2005, Assessment of contaminated streambed sediment in the Kansas part of the historic Tri-State Lead and Zinc Mining District, Cherokee County, 2004, Scientific investigations report 2005-5251.	Ge	Mississippian		Yes
Potra, A., Dodd, J.W., and Ruhl, L.S., 2017, Distribution of trace elements and Pb isotopes in stream sediments of the Tri-State mining district (Oklahoma, Kansas, and Missouri), USA. Applied Geochemistry, v. 82, pp. 25-37.	As	Mississippian	Keokuk Limestone/Warsaw Limestone	Yes
Rubey, W.W., and Bass, N.W., 1925, The geology of Russell County, Kansas, with special reference to oil and gas resources: Kansas Geological Survey Bulletin 10, 45-50 p.	Ba	Colorado	Upper Greenhorn	Yes
Runnels, R.T., and Dubins, M.I., 1949, Chemical and petrographic studies of the Fort Hays chalk in Kansas, Kansas Geological Survey Bulletin 82-1.	Mn	Colorado		Yes
Runnels, R.T., Schleicher, J.A., and van Nortwick, H.S., 1953, Composition of some uranium-bearing phosphate nodules from Kansas shales, Kansas Geological Survey Bulletin 102-3.	Fluorspar, Al, Mg, Ti, U	Cherokee/Bronson/Pleasanton/Kansas City/Shawnee	Excello, Little Osage, Anna, Lake Neosho, Nuyaka Creek, Muncie Creek, Heebner	Yes

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Reference	Critical Mineral	Group	Member	Kansas
Schleicher, J.A., 1959, Germanium in Kansas coals: Kansas Geological Survey Bulletin 134, Kansas Geological Survey, Lawrence.	Ge	Cherokee/Douglas	Lawrence Shale	Yes
Schleicher, J.A. and Hambleton, W.W., 1954, Preliminary Spectrographic Investigation of Germanium in Kansas Coal, Kansas Geological Survey Bulletin 109-8, p. 161-179.	Ge	Cherokee/Marmaton/Kansas City Group		Yes
Schoewe, W.H., 1943, Kansas oil field brines and their magnesium content: Kansas Geological Survey Bulletin 47-2, Kansas Geological Survey, Lawrence.	Mg	Lansing/Kansas City		Yes
Scott, R.W., 1966, New Precambrian(?) Formation in Kansas: Geological Notes: AAPG Bulletin, v. 50, no. 2, p. 380-384.	Ti	Precambrian	Rice	Yes
Smith, H.I., 1938, Potash in the Permian salt basin, Industrial and Engineering Chemistry, v. 30, p. 854-860.	Potash	Permian		Yes
Spencer, C.G., 1995, Loess and weathered limestone joint surfaces as sources of radon in the greater Kansas City area, Missouri and Kansas. Ph.D. Thesis, University of Missouri, Kansas City, 164-168 p.	As, Ba, Cr, Hf, Rb, REE(La, Ce, Sm), Sb, Sc, U, Zr	Kansas City/Pleasanton Group/Lansing Group		Yes
Swineford, A., 1947, Cemented sandstones of the Dakota and Kiowa formations in Kansas: Kansas Geological Survey Bulletin 70-4.	Ba	Dakota	Kiowa Shale	Yes
Swineford, A., 1955, Petrography of upper Permian rocks in south-central Kansas: Kansas Geological Survey Bulletin 111, Kansas Geological Survey, Lawrence, 99-105, 118-139 p.	Ti	Nippewalla/Sumner		Yes
Swineford, A., Frye, J.C., and Leonard, A.B., 1955, Petrography of the Late Tertiary Volcanic Ash Falls in the Central Great Plains: Journal of Sedimentary Research, v. 25, no. 4, p. 243-261.	Ti	Pliocene/Miocene	Ogallala	Yes

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Reference	Critical Mineral	Group	Member	Kansas
Swineford, A., Frye, J.C., and Leonard, A.B., 1956, Petrography and genesis of the Ogallala "Algal Limestone" in Kansas and adjacent states: Journal of Sedimentary Research, v. 26, no. 2, p. 186.	Ba	Pliocene	Ogallala	Yes
Swineford, A. and Runnels, R. T., 1953, Identification of polyhalite (a potash mineral) in Kansas Permian salt: Kansas Acad. Sci. Trans., vol. 56, pp. 364-370.	Potash	Hutchinson		Yes
Swineford, A., 1945, The Cheyenne sandstone and adjacent formations of a part of Russell County, Kansas: Kansas Geological Survey Bulletin 60-4.	Ba	Dakota	Cheyenne Sandstone	Yes
Tanner, D.Q., 1995, Surface-water-quality assessment of the lower Kansas River basin, Kansas and Nebraska; distribution of trace-element concentrations in dissolved and suspended phases, streambed sediment, and fish samples, May 1987 through April 1990: U.S. Geological Survey, Water-Resources Investigations Report 94-4201.	As, Cr, Sr	[Water]		Yes
Tanner, D.Q., and Ryder, J.L., 1996, Surface-water-quality assessment of the lower Kansas River basin, Kansas and Nebraska; selected metals, arsenic, and phosphorus in streambed sediments of first- and second-order streams, 1987: U.S. Geological Survey Water-Resources Investigations Report 94-4196.	As, Ba, Co, Cr, Mn, Sr, V	[Water]		Yes
Thorne, W., 2014, Paleoecology and preservation of faunal assemblages in phosphatic nodules from the Pennsylvanian Midcontinent. Unpublished Undergraduate Thesis, Yale University, 48 p.		Kansas City	Tacket Shale	No
Tien, Pei-lin, 1971, Ubiquity of Hexahydrite in Kansas, Kansas Geological Survey Bulletin 202-1.	Mg	Various		Yes
Tien, P.-L., and Waugh, T.C., 1970, Epsomite and Hexahydrite from an Underground Storage Area, Atchison, Kansas: Kansas Geological Survey Bulletin 199, Kansas Geological Survey, Lawrence, 3-7 p.	Mg	Shawnee	Plattsmouth Limestone	Yes
Tourtlot, H.A., 1955, Radioactivity and uranium content of some Cretaceous shales, central Great Plains: U.S. Geological Survey Trace Elements Investigations 298, 42 p.	As, Co, Cr, Sr, U, V	Montana	Sharon Springs shale	Yes

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Turner, A.C.E., Algeo, T.J., Peng, Y., and Herrmann, A.D., 2019, Circulation patterns in the Late Pennsylvanian North American Midcontinent Sea inferred from spatial gradients in sediment chemistry and mineralogy: <i>Palaeogeography, Palaeoclimatology, Palaeoecology</i> , v. 531, p. 109023.	Ba, REE(Y), Sr, Ti, Zr	Shawnee	Heebner Shale	Yes
Waugh, W.N., Hill, W.E., Galle, O.K., and Hladik, W.B., 1964, The amenability of Kansas clays to alumina extraction by hydrochloric acid treatment: <i>Kansas Geological Survey Bulletin</i> 170, 7 p.	Al	Dakota	Terra Cotta Clay/Janssen Clay	Yes
Welch, J.E., and Hambleton, W.W., 1982, Environmental Effects of Coal Surface Mining and Reclamation on Land and Water in Southeastern Kansas: <i>Kansas Geological Survey Mineral Resources Series</i> 7, 19–34 p.	As, Co, Ga, Ge, Sb	Cherokee		Yes
West, R.R., Miller, K.B., and Watney, W.L., 1997, The Permian System in Kansas, <i>Kansas Geological Survey Bulletin</i> 257.	Potash	Permian		Yes
West, R.R., Archer, A.W., and Miller, K.B., 2010, The role of climate in stratigraphic patterns exhibited by late Palaeozoic rocks exposed in Kansas, <i>Palaeogeography, Palaeoclimatology, Palaeoecology</i> , v. 128, p. 1-16.	Mg; Mn	Pennsylvanian/Permian		Yes
Whittemore, D.O., Basel, C.L., Galle, O.K., and Waugh, T.C., 1981, Geochemical identification of saltwater sources in the Smoky Hill River Valley, McPherson, Saline, and Dickinson Counties, Kansas: <i>Kansas Geological Survey Open-file Report</i> 81–6.	Li, Mg	[Water]		Yes
Williams, C.C., Lohman, S.W., and Hess, R.H., 1949, Geology and ground-water resources of a part of south-central Kansas, with special reference to the Wichita municipal water supply: <i>Kansas Geological Survey Bulletin</i> 79.	Ba	Sumner	Ninnescah Shale	Yes
Yang, J., Torres, M., Algeo, T.J., Hakala, J.A., and Verba, C., 2017, Controls on rare earth element distributions in ancient organic-rich sedimentary sequences: Role of post-depositional diagenesis of phosphorus phases. <i>Chemical Geology</i> , v. 466, pp. 533-544.	REE	Kansas City		Yes
Zeller, D.E., 1968, The stratigraphic succession in Kansas: <i>Kansas Geological Survey Bulletin</i> 189.	Ba	Sumner	Milan Limestone	Yes

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Reference	Critical Mineral	Group	Member	Kansas
Zeller et al., 1976. Potential Uranium Host Rocks and Structures in the Central Great Plains. Kansas Geological Survey, Geology Series 2.	U	Dakota Sandstone		Yes

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