

BSMT	basement
CAMB	Cambrian undifferentiated
CEBT	Bonneterre Formation
CECR	Eau Claire Formation
CEMS	Eau Claire-Mt.Simon
CJDN	Jordan Sandstone
CJDW	Jordan-Wonewoc
CJEC	Jordan-Eau Claire
CJMS	Jordan-Mt.Simon
CJSL	Jordan-St.Lawrence
CJTC	Jordan-Tunnel City
CLBK	Lone Rock/Birkmose Mbr
CLRE	Lone Rock/Reno Mbr
CLTM	Lone Rock/Tomah Mbr
CMFL	Mt.Simon-Fond du lac
CMRC	Mt.Simon-Red Clastics
CMSH	Mt.Simon-Hinckley
CMTS	Mt.Simon Sandstone
CSLT	St.Lawrence-Tunnel City
CSLW	St.Lawrence-Wonewoc
CSTL	St.Lawrence Formation
CTCD	Tunnel City/Davis Fm
CTCE	Tunnel City-Eau Claire
CTCG	Tunnel City Group
CTCM	Tunnel City-Mt.Simon
CTCW	Tunnel City-Wonewoc
CTLR	Tunnel City/Lone Rock Fm
CTMZ	Tunnel City/Mazomanie Fm
CWEC	Wonewoc-Eau Claire
CWMS	Wonewoc-Mt.Simon
CWOC	Wonewoc Sandstone
DCGZ	Coralville/Gizzard Crk Mbr
DCLC	Chickasaw Shale
DCLP	L.Cedar Valley-Pinicon Ridg
DCLS	L.Cedar Valley-Spillville
DCOG	Cedar Valley-Galena
DCOM	Cedar Valley-Maquoketa
DCUM	Coralville Fm+Hinckle Mbr
DCUU	Lithograph City Fm
DCVA	Cedar Valley Group
DCVL	Lower Cedar Valley
DCVU	Upper Cedar Valley
DEVO	Devonian, undifferentiated
DPOG	Pinicon Ridge-Galena
DPOM	Pinicon Ridge-Maquoketa
DPSC	Pinicn-Stwrtvllle-Cmmngsvlle
DSOG	Spillville-Galena
DSOM	Spillville-Maquoketa
DSPL	Wapsipinicon/Spillville Fm
DWAP	Wapsipinicon Group
DWPR	Wapsipinicon/Pinicon Ridge
INDT	indeterminate
JURA	Jurassic-Hallock Redbeds

KCBH	Carlile/Blue Hill Mbr
KCCD	Carlile/Codell Sandstone Mb
KCFP	Carlile/Fairport Mbr
KCLR	Coleraine
KCRL	Carlile Shale
KDKT	Dakota Sandstone
KDNB	Dakota/Nishnabotna Mbr
KDWB	Dakota/Woodbury Mbr
KGRN	Greenhorn
KGRS	Ganeros Shale
KNBR	Niobrara
KPRR	Pierre Shale
KREG	Cretaceous regolith
KRET	Cretaceous undiff.
KSRC	Split Rock Creek
KWIH	Windrow/Iron Hill Mbr
KWND	Windrow
KWOS	Windrow/Ostrander Mbr
NRCD	no record
ODCA	Decorah/Carimona Mbr
ODCR	Decorah Shale
ODGL	Dubuque-Cummingsville
ODPG	Decorah-Platteville-Glenwd
ODPL	Decorah-Platteville
ODUB	Dubuque Fm
OGAP	Galena-St. Peter
OGCD	Cummingsville-Decorah
OGCM	Galena/Cummingsville Fm
OGDP	Galena-Decorah-Platteville
OGGP	Galena Group
OGPC	Prosser-Cummingsville
OGPD	Galena/Prosser-Decorah
OGPR	Galena/Prosser Fm
OGSC	Stewartville-Cummingsville
OGSD	Stewartville-Decorah
OGSP	Glenwood-St.Peter
OGSV	Galena/Stewartville Fm
OGVP	Stewartville-Prosser
OGWD	Glenwood Formation
OMAQ	Maquoketa Formation
OMQD	Maquoketa-Dubuque
OMQG	Maquoketa-Galena
OOCV	Oneota/Coon Valley Mbr
OOHC	Oneota/Hager City Mbr
OPCJ	Prairie Du Chien-Jordan
OPCM	Prairie Du Chien-Mt.Simon
OPCS	Prairie du Chien-StLawrence
OPCT	Pr.du Chien-Tunnel City
OPCW	Prairie du Chien-Wonewoc
OPDC	Prairie Du Chien Group
OPGW	Platteville-Glenwood
OPHF	Platteville/Hidden Falls Mb
OPMA	Platteville/Magnolia Mbr
OPMG	Platteville/McGregor Mbr

OPMI Platteville/Mifflin Mbr
 OPNR Shakopee/New Richmond Mbr
 OPOD Prairie Du Chien/Oneota Fm
 OPPE Platteville/Pecatonica Mbr
 OPSH Pr.du Chien/Shakopee Fm
 OPSP Platteville-St.Peter
 OPVJ Platteville-Jordan
 OPVL Platteville Formation
 OPWR Shakopee/Willow River Mbr
 ORDO Ordovician undiff.
 ORRV Red River Formation
 ORWN Red River-Winnipeg
 OSCJ St.Peter-Jordan
 OSCM St.Peter-Mt.Simon
 OSCS St.Peter-St.Lawrence
 OSCT St.Peter-Tunnel City
 OSPC St.Peter-Prairie Du Chien
 OSPE St.Peter/Pigs Eye Mbr
 OSTM Stoney Mountain Fm
 OSTN St.Peter/Tonti Mbr
 OSTP St.Peter Sandstone
 OSTW Stonewall Formation
 OWIN Winnipeg Formation
 PAAR Argo Gneiss
 PAAU Algoman granites und.
 PABG Becker terrane-gran. gneiss
 PABL Bellingham Granite
 PABR Burntside Gneiss
 PADL Deer Lake Complex
 PAES Soudan Iron-Formation
 PAEY Ely Greenstone
 PAFR Fort Ridgley Granite
 PAFV intermed.-felsic volc. rx
 PAGF Granite Falls Gneiss
 PAGR Giants Range Granite und.
 PAGU Archean granitoid pluton
 PAIF Archean iron formation und.
 PAKG Knife Lake Group
 PALL Lac La Croix Granite
 PALV Lake Vermilion Formation
 PAMB metabasalt/metavolcanic
 PAMC Mcgrath Gneiss
 PAMG MN River Valley Gneiss
 PAMI mafic-intermed.volc.rocks
 PAMP Archean metaplutonic rocks
 PAMR Morton Gneiss
 PAMS metasedimentary rocks
 PAMU mafic-ultmafic intr. undif
 PAMV Montevideo Gneiss
 PANL Newton Lake Formation
 PAOD Odessa Granite
 PAOG Archean orthogneiss
 PAOR Ortonville Granite
 PAPG Archean paragneiss

PASF	Seaforth Gneiss
PASG	Saganaga Tonalite
PASH	Sacred Heart Granite
PASR	Sauk Rapids Meta. Complex
PAST	Sartell Gneiss
PAUD	Archean rocks undivided
PAVC	Vermilion Granitic Complex
PCCR	Precambrian crystalline rcks
PCMU	Precamb.mafic/ultramafic
PCRG	Pre-Croixan regolith
PCUU	Precambrian rocks undiff.
PEAG	Animikie Group
PEAL	Ann Lake Granodiorite
PEBC	Bradbury Creek Grnodiorte
PEBI	Biwabik Iron-Formation
PECM	Cedar Mountain Complex
PECS	Biwabik/UCerty-LSlaty
PEDN	Denham Formation
PEDQ	Dam Lake Quartzite
PEFG	Foley Granite
PEFH	Freedhem Granodiorite
PEFM	Foley Granite magnetic
PEGD	E. Prot. granodiorite
PEGI	Gunflint Iron-Formation
PEGP	Glendorado Pluton
PEGT	Glen Township Formation
PEGU	E.Prot. granite pluton
PEHL	Hillman Tonalite
PEIF	Early Proterozoic iron fm
PEIL	Isle Granite
PELC	Biwabik/Lower Cherty
PELF	Little Falls Formation
PELR	Little Rock Pluton
PELS	Biwabik/Lower Slaty
PEML	Mille Lacs Group
PEMN	Mahnomen Formation
PEMS	E.Prot. metasedimentary
PEMU	E.Prot. mafic intr.undif.
PEPG	Philbrook Diorite/Gabbro
PEPK	Pokegama Quartzite
PEPP	mafic plug-like plutons
PEPZ	Pierz Granite
PERB	Rabbit Lake Formation
PERD	Randall Formation
PERE	Rabbit Lk.Fm-Emily Mbr
PERF	Reformatory Granite
PERG	Richmond Granite
PERK	Rockville Granite
PERL	Rabbit Lk.Fm-lower mbr
PERU	Rabbit Lk.Fm-upper mbr
PERV	Rove Formation
PESC	St.Cloud Granite
PESG	schist-granitic+volcanic
PEST	Stearns Granitic Complex

PESW	St. Wendel Gabbronorite
PESX	Sioux Quartzite
PETL	Trout Lake Formation
PETM	Thomson Formation
PETR	Trommald Formation
PEUC	Biwabik/Upper Cherty
PEUD	E.Proterozoic rocks und.
PEUM	E.Prot.ultramafic intrusn
PEUS	Biwabik/Upper Slaty
PEVR	Virginia Formation
PEWR	Warman Granite
PEWS	WI Mag.terrane-metased
PEWT	Watab Diorite
PEWV	WI Mag.terrane-metavolc
PEYV	Proterozoic basalt dikes
PITT	pitt
PMBB	Beaver Bay/related intrus.
PMBE	Bald Eagle intrusion
PMBF	Beaver Bay felsic intr.
PMBI	Beaver Bay intermed.intr.
PMBL	Lester River sill
PMBM	Beaver Bay mafic intrusives
PMBR	Beaver River diabase
PMBS	Sonju Lake Intrusion
PMCF	Clam Falls volcanics
PMCR	Congdon Park Rhyolite
PMCV	Chengwatana m-i volcanics
PMCX	St Croix Horst volcanics
PMDA	Duluth Cplx-anorth.series
PMDC	Duluth Complex
PMDE	Duluth Cplx-early gabbro se
PMDF	Duluth Cplx-felsic series
PMDL	Duluth Cplx-layered series
PMFL	Fond du Lac Formation
PMGI	Mid.Prot.gabbro intrusions
PMGL	Greenwood Lake intrusion
PMHF	Hinckley-Fond du Lac
PMHN	Hinckley Sandstone
PMIU	Mid.Prot.intrusions und.
PMLG	Logan intrusions
PMMU	M.Prot.mafic intr.undif.
PMMV	Minong volcanics
PMNB	North Branch volcanics
PMND	North Shore interflow ss
PMNF	North Shore fels. volcanics
PMNI	North Shore intermed.volc
PMNM	North Shore mafic volcanics
PMNP	Nopeming Sandstone
PMNS	North Shore Volcanic Grp.
PMPA	Partridge River intrusion
PMPK	Puckwunge Formation
PMPR	Pigeon River Intrusions
PMRC	Red Clastic Series
PMSC	Solor Church Formation

PMSK	South Kawishiwi intrusion
PMSU	Mid.Prot. sed. undivided
PMUD	Mid. Proterozoic rocks und.
PMVU	Keweenawan volcanics und.
PMWL	Whitefish Lake granophyre
PUDF	Phanerozoic undiff.
PUSZ	shear zone
PVMT	pavement
QBCB	boulder-calc.brown
QBCG	boulder-calc.gray
QBCU	boulder-calcareous
QBCY	boulder-calc.yellow
QBNU	boulders-unsorted
QBUB	boulder or boulders-brown
QBUG	boulder or boulders-gray
QBUK	boulder or boulders-black
QBUL	boulder or boulders-green
QBUO	boulder or boulders-orange
QBUR	boulder or boulders-red
QBUU	boulder or boulders
QBUW	boulder or boulders-white
QBUY	boulder or boulders-yellow
QCCB	calcareous clay-brown
QCCG	calcareous clay-gray
QCCU	calcareous clay
QCDG	silty clay-mod.sorted-gray
QCDU	silty clay-mod.sorted
QCUB	clay-brown
QCUG	clay-gray
QCUK	clay-black
QCUL	clay-green
QCUO	clay-orange
QCUR	clay-red
QCUU	clay
QCUW	clay-white
QCUY	clay-yellow
QFCB	sand w calc.pebbles-brown
QFCG	sand w calc.pebbles-gray
QFCR	sand w calc.pebbles-red
QFCU	sand w calc.pebbles
QFDB	sand-mod. sorted-brown
QFDG	sand-mod. sorted-gray
QFDU	sand-mod. sorted
QFDY	sand-mod. sorted-yellow
QFOB	sand-poorly sorted-brown
QFPB	sand w PC pebbles-brown
QFPG	sand w PC pebbles-gray
QFPR	sand w PC pebbles-red
QFPU	sand w PC pebbles
QFSG	sand w shale pebbles-gray
QFSU	sand w shale pebbles
QFUB	sand-brown
QFUG	sand-gray
QFUK	sand-black

QFUL	sand-green
QFUO	sand-orange
QFUR	sand-red
QFUU	sand
QFUW	sand-white
QFUY	sand-yellow
QFWB	sand-well sorted-brown
QFWG	sand-well sorted-gray
QFWU	sand-well sorted
QGCB	gravel w/calc. pebbles
QGCU	gravel w/calc. pebbles
QGCY	gravel w/calc. pebbles
QGDG	gravel-mod.sorted-gray
QGDU	gravel-moderately sorted
QGPB	gravel w/Precamb. pebbles
QGSB	gravel w/shale pebbles
QGSU	gravel w/shale pebbles
QGUB	gravel (+larger)-brown
QGUG	gravel (+larger)-gray
QGUK	gravel (+larger)-black
QGUL	gravel (+larger)-green
QGUO	gravel (+larger)-orange
QGUR	gravel (+larger)-red
QGUU	gravel (+larger)
QGUW	gravel (+larger)-white
QGUY	gravel (+larger)-yellow
QGWU	gravel-well sorted
QHCB	sand +larger w/calc.pebbles
QHCG	sand +larger w/calc.pebbles
QHCU	sand +larger w/calc.pebbles
QHDG	sand +larger-mod.sort-gry
QHDU	sand +larger-mod.sorted
QHPB	sand+lrgr w/Prec.peb-brn
QHSG	sand+lrgr w/shle.peb-gry
QHSU	sand+lrgr w/shale pebbles
QHUB	sand +larger-brown
QHUG	sand +larger-gray
QHUK	sand +larger-black
QHUL	sand +larger-green
QHUO	sand +larger-orange
QHUR	sand +larger-red
QHUU	sand +larger
QHUW	sand +larger-white
QHUY	sand +larger-yellow
QICB	calcareous silt-brown
QICU	calcareous silt
QIUB	silt-brown
QIUG	silt-gray
QIUK	silt-black
QIUL	silt-green
QIUR	silt-red
QIUU	silt
QIUW	silt-white
QIUY	silt-yellow

QJCB	calc.silty clay-brown
QJCG	calc.silty clay-gray
QJCL	calc.silty clay-green
QJCU	calcareous clayey silt
QJDG	silt+clay-mod.srtd-gry
QJUB	silt+clay-brown
QJUG	silt+clay-gray
QJUK	silt+clay-black
QJUL	silt+clay-green
QJUR	silt+clay-red
QJUJ	silt+clay
QJUW	silt+clay-white
QJUY	silt+clay-yellow
QLCB	calc.sandy clay-brown
QLCG	calc.sandy clay-gray
QLCU	calcareous sandy clay
QLDB	clay+sand-mod.sort-brn
QLDG	clay+sand-mod.sort-gry
QLDK	clay+sand-mod.sort-blk
QLDU	clay+sand-mod.sorted
QLDY	clay+sand-mod.sort-yel
QLPB	sandy clay w PC mat.-brown
QLPR	sandy clay w PC peb.-red
QLUB	clay+sand-brown
QLUG	clay+sand-gray
QLUK	clay+sand-black
QLUL	clay+sand-green
QLUO	clay+sand-orange
QLUR	clay+sand-red
QLUU	clay+sand
QLUW	clay+sand-white
QLUY	clay+sand-yellow
QNCB	clayless sediment-calc-brn
QNCG	clayless sediment-calc-gray
QNCU	clayless sediment-calc.
QNDB	sand+silt-mod.srtd-brn
QNDG	sand+silt-mod.srtd-gry
QNDR	sand+silt-mod.srtd-red
QNDU	sand+silt-mod.sorted
QNUB	sand+silt-brown
QNUG	sand+silt-gray
QNUK	sand+silt-black
QNUL	sand+silt-green
QNUO	sand+silt-orange
QNUR	sand+silt-red
QNUU	sand+silt
QNUW	sand+silt-white
QNUY	sand+silt-yellow
QNWG	sand+silt-well srtd-gry
QPCB	pebbly sand/silt/clay-calc.
QPCG	pebbly sand/silt/clay-calc.
QPCR	pebbly sand/silt/clay-calc.
QPCU	pebbly sand/silt/clay-calc.
QPDB	pebbly sand/silt/clay-mod.

QPDC pebbly sand/silt/clay-mod.
 QPDG pebbly sand/silt/clay-mod.
 QPDU pebbly sand/silt/clay-mod.
 QPPB peb.sand/silt/clay-PC-brn
 QPSG peb.sand/silt/clay-shl-gry
 QPSU peb.sand/silt/clay-shale
 QPUB pebbly sand/silt/clay-brown
 QPUG pebbly sand/silt/clay-gray
 QPUK pebbly sand/silt/clay-black
 QPUL pebbly sand/silt/clay-green
 QPUO pebbly sand/silt/clay
 QPUR pebbly sand/silt/clay-red
 QPUU pebbly sand/silt/clay
 QPUW pebbly sand/silt/clay-white
 QPUY pebbly sand/silt/clay
 QPWL peb.snd/silt/clay-w.srt.grn
 QRUB sand+gravel+broken rk-brn
 QRUG sand+gravel+broken rk-gry
 QRUK sand+gravel+broken rk-blk
 QRUR sand+gravel+broken rk-red
 QRUU sand+gravel+broken rock
 QRUW sand+gravel+broken rk-wht
 QRUY sand+gravel+broken rk-yel
 QSDB peat-mod. sorted-blk
 QSNK peat-unsorted-black
 QSOB peat-poorly sorted-brown
 QSOK peat-poorly sorted-black
 QSUB peat-brown
 QSUG peat-gray
 QSUK peat-black
 QSUR peat-red
 QSUU peat,muck
 QSUW peat-white
 QTCB till w/calc.pebbles-brn
 QTCG till w/calc.pebbles-gry
 QTCK till w/calc.pebbles-blk
 QTCR till w/calc.pebbles-red
 QTCU till w/calc.pebbles
 QTPB till w/Precam.pebbles-brn
 QTPG till w/Precam.pebbles-gry
 QTPR till w/Precam.pebbles-red
 QTPU till w/Precam.pebbles
 QTSB till w/shale pebbles-brn
 QTSG till w/shale pebbles-gry
 QTUB till-brown
 QTUG till-gray
 QTUK till-black
 QTUL till-green
 QTUR till-red
 QTUU till
 QTUW till-white
 QTUY till-yellow
 QUCB calcareous sediment-brown
 QUCC calcareous sediment-gray

QUCR	calcareous sediment-red
QUCU	calcareous sediment
QUDB	Quat.depos.-mod.sort-brn
QUDG	Quat.depos.-mod.sort-gry
QUDU	Quat.depos.-mod.sort
QUPB	sed.w PC pebbles-brown
QUPR	sediment w PC pebbles-red
QUPU	sediment w PC pebbles
QUSG	sed.w shale peb.-gray
QUSU	sediment w shale pebbles
QUUB	Quat. deposit-brown
QUUG	Quat. deposit-gray
QUUK	Quat. deposit-black
QUUL	Quat. deposit-green
QUUR	Quat. deposit-red
QUUU	Quaternary deposit
QUUW	Quat. deposit-white
QUUY	Quat. deposit-yellow
QWCB	clay+sand+silt-calc-brown
QWCG	clay+sand+silt-calc-gray
QWCU	clay+sand+silt-calc
QWDB	cly/snd/slt-no pb-m.srt-brn
QWDG	cly/snd/slt-no pb-m.srt-gry
QWDU	cly/snd/slt-no pb-m.srt
QWDY	cly/snd/slt-no pb-m.srt-yel
QWUB	cly/snd/slt-no peb.-brn
QWUG	cly/snd/slt-no peb.-gry
QWUK	cly/snd/slt-no peb.-blk
QWUL	cly/snd/slt-no peb.-grn
QWUR	cly/snd/slt-no peb.-red
QWUU	clay/sand/silt-no peb.
QWUW	cly/snd/slt-no peb.-wht
QWUY	clay/sand/silt-no peb.-yel
RCUB	Recent clay w/org-brn
RCUK	Recent clay w/org-blk
RFUB	Recent sand-brown
RFUK	Recent sand-black
RIUK	Recent silt-black
RJUG	Recent silty clay-gray
RJUJ	Recent silty clay
RMMF	man-made fill
RSUB	Recent peat, muck-brown
RSUK	Recent peat, muck-black
RSUU	Recent peat, muck
RUDK	Recent dep.-mod sorted-blk
RUUB	Recent deposit-brown
RUUG	Recent deposit-gray
RUUK	Recent deposit-black
RUUL	Recent deposit-green
RUUR	Recent deposit-red
RUUU	Recent undiff.
RUUY	Recent deposit-yellow
UREG	weathering residuum unc.age
WFUB	Wisc.sand-brown

WFUG	Wisc.sand-gray
WFUR	Wisc.sand-red
WFUU	Wisconsinan sand
WFUY	Wisc.sand-yellow
WHPB	Wisc.sand+grvl-Prec.peb-brn
WHUB	Wisc.sand+grvl-brown
WLUB	Wisc.clay+sand-brown
WLUG	Wisc.clay+sand-gray
WLUU	Wisc.clay+sand
WNNB	Wisc.silt+lrgr-unsrt-brown
WPCR	Wisc.cly+snd+slt-calc-red
WPUR	Wisc.cly+snd+slt-peb-red
WPUU	Wisc.cly+snd+slt-peb
WTPB	Wisc.till-PC pebbles-brn
WTPR	Wisc.till-PC pebbles-red
WTSB	Wisc.till-shale pebbles-brn
WTSG	Wisc.till-shale pebbles-gry
WTSU	Wisc.till-shale pebbles
WTUB	Wisc.till-brown
WTUR	Wisc.till-red
WTUU	Wisconsinan till
WUUB	Wisc. deposit-brown
WUUG	Wisc. deposit-gray
WUUR	Wisc. deposit-red