U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

PRELIMINARY GEOLOGIC MAP OF THE PALEOZOIC ROCKS IN THE WILDCAT WASH SE AND WILDCAT WASH SW QUADRANGLES, LINCOLN AND CLARK COUNTIES, NEVADA

By

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DESCRIPTION OF MAP UNITS

Descriptive colors for map units are from the Rock-Color Chart Committee (1951)

Qa **Modern alluvium (Holocene(?))**--Moderate-yellowish-brown to pale-yellowish-brown silt, sand, gravelly sand, and gravel; gravel and sand consist mostly of Paleozoic carbonate clasts, and some volcanic clasts, derived from adjacent ranges. Much of fine-grained material is probably reworked eolian silt and sand. Unconsolidated to weakly consolidated, poorly sorted, and poorly to moderately bedded. Unit forms channel and floodplain deposits in active washes. Less than 10 m thick

QTu **Quaternary and Tertiary deposits undivided (Holocene to Tertiary)**--Quaternary deposits mostly alluvium, colluvium, and landslides, and Tertiary deposits mostly Muddy Creek Formation and older Tertiary sediments. For detailed description of the Muddy Creek and older deposits, see Schmidt (1994)

Tku **Kane Wash Tuff undivided (Miocene)**--Mildly peralkaline ash-flow tuff that weathers light brown to moderate reddish brown; commonly contains adularescent sanidine. Includes parts of the Gregerson Basin and Grapevine Spring members of the Kane Wash Tuff as defined by Scott and others (1993, 1995); for detailed description of these units, see Scott and others (1993, 1995), Pampeyan (1993), and Schmidt (1994). Kane Wash Tuff exposed only in Wildcat Wash SE quadrangle where its maximum thickness is about 70 m

Bird Spring Formation (Lower Permian, Pennsylvanian, and Upper Mississippian)--Subdivided everywhere into six informal units as defined in adjacent quadrangles (Page, 1992; 1995; in press); from top to base, they are upper limestone member, red slope-forming member, massive gray limestone member, dolomitic member, Tungsten Gap member, and basal limestone member. Bird Spring is exposed in the Meadow Valley Mountains in eastern part of Wildcat Wash SE quadrangle, and in the Elbow Range in the western part of Wildcat Wash SW quadrangle

Pb6 **Upper limestone member (Lower Permian)**--Consists of alternating beds of limestone, silty limestone, dolomitic limestone, and quartzite. Limestone is medium-gray (fresh) and medium-light-gray to light-olive-gray (weathered), aphanic to finely crystalline, and thin to thick bedded. Silty limestone is medium-gray (fresh), light-brown, moderate-brown and moderate-reddish-brown (weathered), and mostly finely crystalline. Dolomitic limestone is medium-gray (fresh) and light-gray to yellowish-gray (weathered), and aphanic. Quartzite, mostly in the upper part of member, is medium-gray to pale-red (fresh) and light-brown, grayish-brown, and dusky-yellowish-brown (weathered); quartz grains are fine grained, subrounded, and moderately sorted. Common beds of dusky-yellowish-brown chert throughout the member. Fossils include brachiopods, bryozoans, gastropods, solitary and colonial corals, and fusulinids; a *Heritschioides* (C.H. Stevens, written commun., 1995) coral biostrome occurs near the base of the member. Lower contact with the red slope-forming member appears to be gradational. At least 360 m of unit is exposed in the northeast corner of the Wildcat Wash SE quadrangle

Pb5 **Red slope-forming member (Lower Permian)**--Upper one third of member consists predominantly of bioclastic limestone, medium-gray (fresh), light-olive-gray (weathered), finely to coarsely crystalline, and thin to thick bedded. Fossils include fusulinid and crinoid columnal fragments. Also includes silty limestone that is pale-red (fresh) and moderate-brown to moderate-yellowish-brown (weathered). The gray bioclastic limestone locally occurs as cobble-sized breccia clasts enclosed in a matrix of the moderate-brown weathering silty limestone; similar breccia zones within the member in adjacent quadrangles are interpreted as submarine debris flow deposits (Page, 1993; in press). Lower two thirds of the member consists mainly of thinly laminated interbeds of silty limestone, calcareous siltstone, and chert, all of which lack macrofossils but contain sponge spicules and poorly preserved radiolarians. Limestone is micritic, dark-gray to olive-gray (fresh), and very light gray to light-olive-gray, and less commonly purplish-gray (weathered); calcareous siltstone laminae tend to weather yellowish gray, dusky yellowish gray, and moderate brown. Chert is olive-gray to olive-black (fresh), and moderate brown to dusky yellowish brown (weathered). Lowermost 15 to 20 m of member consists mainly of pale-red, very thin bedded to thinly laminated silty limestone and calcareous siltstone, and thin beds and lenses of medium-dark-gray, finely-crystalline, limestone that contains bedding-parallel laminations. Distinctive phosphatic concretions 0.5 to 4 cm in diameter are present at the base of member; concretions are commonly cored by fish bone fragments. Lower contact with massive gray limestone member is sharp and represents a major Lower Permian sequence boundary (Page, 1993; in press). Member equivalent to unit d of the Bird Spring Formation of Pampeyan (1993). Entire member forms pinkish-reddish-brown slope, and is present only in northwest part of Wildcat Wash SE quadrangle where it is 175 to 200 m thick

Pb4 **Massive gray limestone member (Lower Permian)**--Predominantly massive limestone, dark-gray (fresh) and medium-dark-gray to light-olive-gray (weathered), finely to coarsely crystalline, and thick to very thick bedded. Contains some discontinuous layers and nodules of dusky-yellowish-brown chert. The uppermost 13 m of the member consists of flaggy, finely crystalline, very thin bedded, fusulinid-rich limestone that is medium-gray (fresh) and grayish-orange, light-brown, moderate-brown, and dusky-yellowish-brown (weathered). The basal 7 m of member consists of cherty limestone (commonly consisting of more than 40 percent chert) that is medium-dark-gray to grayish-red (fresh), and light-gray, pale-red, and pinkish-gray (weathered), aphanic to finely crystalline, and thin-bedded. Member contains abundant fossils including *Durhamina* corals, *Syringapora* coral mounds, crinoid columnals, *Schwagerina* fusulinids, bryozoans, brachiopods, and planispiral gastropods. Unit forms massive cliffs and is about 45 m thick

P/Pb3 **Dolomitic member (Lower Permian and Upper and Middle Pennsylvanian)**--Limestone, dolomitic limestone, and dolomite, medium-dark-gray and olive-gray to light-olive-gray (fresh), and light-gray, yellowish-gray, light-olive-gray, moderate-yellowish-brown, and dusky-yellowish-brown (weathered), finely crystalline (less commonly medium to coarsely crystalline) and thin to thick bedded. Fossils include crinoid columnals, colonial and solitary rugose corals, *Syringapora*, fusulinids, brachiopods, and bryozoans. Beds of the member generally exhibit a lighter gray color compared with beds in other members of the Bird Spring. Member forms step-like ledges and is 270 to 300 m thick in the Wildcat Wash SW quadrangle, and about 250 m thick in the Wildcat Wash SE quadrangle. Map symbol for member is queried in northern half of Elbow Range pending conodont analyses

IPb2 **Tungsten Gap member (Middle Pennsylvanian)**--Silty dolomitic limestone, medium-gray (fresh) and dusky-yellowish-brown to moderate-brown, yellowish-gray, and grayish-orange (weathered), finely crystalline, and thin-bedded. Fossils include brachiopods and crinoid columnals. Member is distinctive due to conspicuous desert varnish on weathered surfaces, and serves as a prominent marker bed within the Bird Spring Formation in the region. Member is equivalent to the Tungsten Gap Chert (Castle, 1967; Langenheim and Webster, 1979). Forms resistant, rounded cliff about 15-25 m thick

IPMb1 **Basal limestone member (Middle Pennsylvanian to Upper Mississippian)**--Limestone, minor dolomite, and chert. Limestone is medium-gray, medium-dark-gray, olive-gray (fresh), and light-gray, yellowish-gray, light-olive-gray, and grayish-orange to moderate-yellowish brown (weathered); beds are commonly sandy, bioclastic, and locally oolitic. Limestone is finely to coarsely crystalline, thin to thick bedded; some beds contain bedding-parallel laminations and small-scale trough crossbeds. Abundant layers and nodules of dark-gray (fresh) and dusky-yellowish-brown (weathered) chert which locally comprise more than half of some beds. Several dolomite beds in the middle part of unit are medium-gray (fresh) and yellowish-gray to light-gray (weathered). Member contains *Syringapora*, solitary rugose corals, brachiopods, bryozoans, and crinoid columnals; *Chaetetes* and fusulinids present in upper part. Member equivalent to most of Bs_C unit, Bird Spring Group, of Langenheim and others (1962). Basal 14 m or so of member is reportedly Upper Mississippian (late Chesterian) in age based on brachiopods, conodonts, and calcareous foraminifers (Webster, 1969; Brenckle, 1973; Lane and others, 1983). Lower contact with the underlying Indian Springs Formation is gradational. Member forms step-like ledges and is estimated to be 500 to 600 m thick

Mis **Indian Springs Formation (Upper Mississippian)**--Interbedded limestone, shale, and quartzite. Limestone is medium-gray, grayish-red, and moderate-yellowish-brown to grayish-brown, fine to coarsely crystalline, and mostly thin bedded. Shale is dusky-red, grayish-red-purple, grayish-orange, and grayish-black, and is mostly in the lower part of the formation. Quartzite, most abundant near the top of the formation, is olive-gray to light-gray (fresh) and moderate-brown and moderate-yellowish-brown to dusky-yellowish-brown (weathered); composed of fine, subrounded, and moderately sorted quartz grains; beds range from 0.5 to 1.0 m thick. Fossils in the Indian Springs include *Rhipidomella nevadensis*, spiriferid and productid brachiopods, solitary rugose corals, crinoid columnals, and bryozoans; *Stigmaria* compressions are commonly present at the base of the formation. Unit is equivalent to member Bs_b of the Bird Spring Group of Langenheim and others (1962), and is late Chesterian in age (Webster, 1969; Brenckle, 1973; Lane and others, 1983). The lower contact of the formation is conformable on limestone beds of the Battleship Wash Formation, although it is rarely exposed. Webster (1969) interpreted the contact as disconformable based on conspicuous lithologic and faunal changes between the Indian Springs and Battleship Wash. Formation forms slopes and is approximately 60 m thick

Mbw **Battleship Wash Formation (Upper Mississippian)**--Limestone and minor quartzite. Limestone is sandy and bioclastic, medium-dark-gray (fresh) and light-olive-gray (weathered), mostly coarsely crystalline, and thin-bedded. Basal 1.5 m of formation consists of quartzite and sandy limestone. Quartzite is calcareous, medium-light-gray (fresh) and grayish-orange to olive-gray (weathered), and thin-bedded. Fossils in formation include *Faberophyllum* and other solitary rugose corals, and spiriferid brachiopods. Formation is equivalent to unit Bs_a of the Bird Spring Group of Langenheim and others (1962), and is latest Meramecian and early Chesterian in age (Brenckle, 1973; Lane and others, 1983; Poole and Sandberg, 1991). Forms ledgy cliffs and is about 110 m thick

Monte Cristo Group (Upper and Lower Mississippian)--From top to base, subdivided into Yellowpine Limestone, Bullion Limestone, Anchor Limestone, and Dawn Limestone; series designations are from Poole and Sandberg (1991). Thickness of group is as much as 615 m

Mmcy **Yellowpine Limestone (Meramecian)**--Medium dark gray to dark gray (fresh) and medium light gray to light olive gray (weathered), medium crystalline, and mostly thin-bedded. Contains nodules and discontinuous beds of medium-dark-gray (fresh) and dusky-yellowish-brown (weathered) chert mostly in the upper part of the formation. Contains solitary rugose corals, *Syringapora* coral mounds, *Lithostrotionella* corals, and crinoid columnals. Contact between Yellowpine and Bullion is arbitrary, but was mapped following Langenheim and others (1962), who placed the contact at the base of an interval of limestones darker gray and thinner-bedded, and that contained abundant solitary rugose corals in contrast to underlying limestones of the Bullion. Yellowpine forms cliffs and is 80-125 m thick

Mmcb **Bullion Limestone (Osagean)**--Limestone and chert. Upper part is about 50 m thick and consists of limestone, medium-dark-gray (fresh) and light-gray to light-olive-gray (weathered), medium crystalline, and thick bedded; contains dusky-yellowish-brown weathering chert layers. Middle 100 m consists of alternating chert and limestone beds. Chert is dark-gray (fresh) and moderate-brown to dusky-yellowish-brown (weathered), and occurs in beds 7-10 cm thick that have bedding-parallel laminations and small-scale trough crossbeds; chert beds commonly predominate in this middle part of the formation. Limestone is medium-light-gray (fresh), light-olive-gray (weathered), and mostly coarsely crystalline. Lower 30 m consists of relatively chert-free limestone that is medium-light-gray (fresh) and light-gray (weathered), coarsely crystalline, and thick bedded. Limestone beds within the Bullion generally weather to lighter shades of gray compared with limestone beds in the Yellowpine and Anchor. Abundant crinoid columnal fragments and sparse brachiopods and solitary rugose corals occur throughout the Bullion. Bullion forms massive cliffs and is 180 to 200 m thick

Mmca **Anchor Limestone (lower Osagean)**--Alternating thin-bedded chert and limestone. Chert is medium-gray to medium-light-gray (fresh) and moderate-yellowish-brown to dusky-yellowish-brown (weathered). Limestone is medium-dark-gray (fresh) and medium-gray to light-olive-gray (weathered), and finely crystalline. Unit contains brachiopods, crinoid columnals, and solitary corals. The Anchor displays a distinctive reddish-brown color in outcrop because of abundant chert beds. Formation forms ledgy slopes, and is 140 to 150 m thick

Mmcd **Dawn Limestone (upper Kinderhookian and lower Osagean)**--Thin bedded, medium dark gray (fresh) and medium gray, and light olive gray (weathered), and aphanic to finely crystalline. Commonly contains elongate nodules and discontinuous layers of moderate-brown to dusky-yellowish-brown-weathering chert. Abundant fossils consisting of solitary rugose corals, *Lithostrotionella* corals, brachiopods, and crinoid columnals. Brenckle (1973) reported a disconformity at lower contact with Crystal Pass Limestone based on foraminifers, but Poole and Sandberg (1991) suggested that the contact is gradational and intertonguing. Forms ledgy cliffs and is 120 to 140 m thick

MDcp **Crystal Pass Limestone (Lower Mississippian and Upper Devonian)**--Medium light gray (fresh) and light gray (weathered), mostly aphanic but locally finely crystalline, and thin to thick bedded; contains sparse gastropods. Crystal Pass serves as marker unit because it displays a distinctive light gray to almost white color in outcrop compared with darker gray limestone beds in the overlying Dawn and underlying Guilmette. Forms massive cliffs, and is about 80-100 m thick in the northern part of the map area (Meadow Valley Mountains), and 60 to 80 m thick in the southern part (northern Arrow Canyon Range)

Dg **Guilmette Formation (Upper and Middle Devonian)**--Dolomite, limestone, and quartzite. Upper 275 m of formation is mostly limestone and interbedded quartzite. Limestone is medium-light-gray (fresh) and medium-gray to light-gray (weathered), aphanic to finely crystalline, and thin bedded; beds commonly contain bedding-parallel laminations. Fossils include brachiopods, gastropods, and stromatoporoids. Contains at least four quartzite beds in the upper part of the formation; quartzite is pale-yellowish-brown to medium-gray (fresh) and dusky-yellowish-brown to light-brown (weathered); quartz grains are mostly medium grained, and less commonly fine and coarse grained, moderately well sorted, and subrounded to rounded; beds range from 15 to 30 cm thick and contain bedding-parallel laminations and trough crossbeds. Middle 65 m of formation is mostly dolomite, dark-gray (fresh) and medium-gray to medium-dark-gray (weathered), finely crystalline, and thin bedded; contains abundant stromatoporoids, common *Amphipora*, and gastropods. The upper and middle parts of the formation are equivalent to Arrow Canyon Formation of Langenheim and others (1962). Lower 80-100 m of formation consists of dolomite and subordinate interbedded limestone. Dolomite is silty and mostly light gray, light olive gray, olive gray (fresh), and yellowish gray (weathered), finely to medium crystalline, and thin to thick bedded; shows bedding-parallel laminations, tepee structures and mud cracks. Limestone beds are olive gray to medium dark gray (fresh) and medium gray to medium light gray (weathered), mostly aphanic, and thin to thick bedded. Lower part of formation is equivalent to Moapa Formation of Langenheim and others (1962), and to the "yellow bed" of Tschanz and Pampeyan (1970). Overall Guilmette Formation forms step-like ledges and is 420 to 440 m thick

Dsi **Simonson Dolomite (Middle Devonian)**--Upper 20 m is biostromal dolomite, medium-dark-gray to dark-gray (fresh) and medium-gray to light-olive-gray (weathered), medium crystalline, and thin bedded. Biostromes consist of *Thamnopora*, brachiopods, and bulbous stromatoporoids; *Stringocephalus* brachiopods are present near the top. Most of the remaining part of formation consists of alternating beds of yellowish-gray, medium- to dark-gray, commonly mottled yellowish-gray, and light-olive-gray, slightly argillaceous, finely crystalline, thin bedded dolomite, showing bedding-parallel to wavy laminations, mudcracks, and convolute bedding. Basal 3-12 m of formation is quartzite, yellowish-gray (fresh) and dark-yellowish-brown, and moderate-brown to brownish-black (weathered); quartz grains are fine to very fine grained, subrounded, and moderately well sorted; contains hummocky cross-stratification. Formation is equivalent to Piute Formation of Langenheim and others (1962). Forms ledgy slopes and is about 80-100 m thick

Sl **Laketown Dolomite (Upper and Middle Silurian)**--Laketown displays characteristic three part subdivision in outcrop consisting of upper dark gray, middle light gray, and lower dark gray dolomite sequences (Tschanz and Pampeyan, 1970). The upper dark gray dolomite, about 30 m thick, is medium-dark-gray, aphanic to finely crystalline, thin to thick bedded, and contains brachiopods, crinoid columnals, and silicified corals. Middle light gray dolomite, about 110 m thick, is medium-dark-gray (fresh), light-gray (weathered), and aphanic to finely crystalline. Beds contain wavy parallel laminations, nodules and discontinuous layers of dusky-yellowish-brown weathering chert, and sparse crinoid columnals and corals. Basal 30 m of middle sequence consists of aphanic, algal-laminated, very light-gray weathering dolomite. Lower dark gray dolomite is dark-gray to medium-dark-gray, finely crystalline, vuggy, and thin to thick bedded; beds contain distinctive light-gray-weathering wavy parallel laminations and mottles, some ripple cross-bed sets about 2.5-cm-thick, and nodules and layers of dusky-yellowish-brown weathering chert. Lower dark dolomite is highly fossiliferous and contains crinoid columnals, silicified solitary corals, *Favosites*, *Halysites*, and brachiopods. Laketown is exposed only in the northern half of Wildcat Wash SE quadrangle where it forms cliffs and is about 200 m thick

Oes **Ely Springs Dolomite (Upper Ordovician)**--Upper part of formation, about 25 m thick, consists of dolomite, medium-gray to medium-light-gray (fresh) and light-olive-gray to light-gray (weathered) with splotchy light-gray mottles; beds are thin to thick bedded. Common zones of oncoids, and abundant crinoid columnals, brachiopod, and coral fragments. Middle part (about 100 m thick) is a massive cliff that consists of dolomite, dark-gray (fresh) and medium-dark-gray (weathered), finely crystalline, and thin bedded, with common bedding-parallel laminations; contains crinoid columnals, brachiopods, *Favosites*, and other colonial and solitary corals. A 10- to 15-m-thick cherty zone is present near the center of the middle part. Lower part, about 15 m thick, consists mostly of medium-light-gray to light-gray bioclastic dolomite containing abundant crinoid columnal fragments and brachiopods. Lower part also contains very thin beds of resistant (silicified), moderate-brown to dusky-yellowish-brown, trough-crossbedded sandy dolomite, and a basal 1- to 2-m-thick zone of moderate-red to pale-red, thin-bedded to laminated, slightly calcareous shale, siltstone, and fine-grained sandstone. Formation is about 140 m thick

Oe **Eureka Quartzite (Middle Ordovician)**--Consists of quartzite and friable quartz sandstone, white (fresh) and light-brown, and moderate-brown to dusky-yellowish-brown (weathered); quartz grains are fine to medium, rounded to subrounded, and moderately well sorted. Formation is thin to thick bedded, and contains tabular planar crossbeds and less common trough crossbeds; crossbed sets average about 0.4 m thick; also contains *Skolithos* burrows. Forms rounded cliffs and is about 40 m thick

Op **Pogonip Group undivided (Middle and Lower Ordovician)**--Includes Antelope Valley Limestone and Goodwin Limestone (Ross, 1964); generally only the Antelope Valley Limestone is exposed in the map area. **Antelope Valley Limestone** consists of five parts that total about 300 m in thickness (Page, 1995; in press). In descending order, these parts include: upper slope former, upper cliff former, middle slope former, lower cliff former, and lower slope former. Upper slope former, about 80 m thick, consists of thin bedded to laminated limestone and dolomite. Dolomite, present only in the uppermost 15 to 20 m, is dark-gray (fresh), weathering to alternating shades of gray, finely to medium crystalline, and mostly thin bedded; contains yellowish-gray burrow mottles. Limestone consists of bioclastic packstone, mudstone, and micrite (Ross and others, 1989). Packstone is dark-gray (fresh and weathered), burrow-mottled to pale-red and grayish-orange, and contains fragments of gastropods, trilobites, crinoid columnals, brachiopods, and intraclasts; commonly shows ripple cross-stratification. Mudstone is light-gray to grayish-orange and burrowed in lower part and laminated at top. Micrite is light-gray and contains fenestrae. Abundant *Receptaculites*, *Palliseria*, and pale-red to grayish-orange oncoids are present near base of unit. Upper cliff former, 60 m thick, is limestone, medium-dark-gray, finely crystalline, and thick bedded; burrow-mottled to shades of grayish and yellowish orange; contains abundant pale-red to yellowish-orange oncoids, and gastropods. *Receptaculites* are present from the middle to the top of the upper cliff former. Middle slope former is about 80 m thick and consists of thin-bedded to laminated, dark-brown to grayish-orange limestone, finely to medium crystalline, with dark-brown chert layers and abundant burrow trails on bedding planes. Also includes interbeds of medium-gray to light-olive-gray shale, grayish-orange calcareous siltstone, and intraclastic limestone in upper part. Lower cliff former is about 30 m thick and consists of regularly-bedded limestone, medium-dark-gray (fresh) and light-olive-gray to medium-gray (weathered), and finely to medium crystalline; contains discontinuous dark-brown chert layers about 5 cm thick, and zones of yellowish-orange burrow mottles that increase in density toward the top. Lower slope former is about 50 m thick and consists of silty dolomite, light-olive-gray to olive-gray (fresh) and grayish-orange to moderate-yellowish-brown (weathered), mostly finely crystalline, and thin bedded; contains grayish-orange wavy, silty laminae that show bioturbation. **Goodwin Limestone** (subsurface only): in adjacent areas consists of dolomite, medium-dark-gray (fresh) and light-olive-gray (weathered), mostly medium crystalline, and thick bedded; characteristically contains dark-brown weathering chert layers and nodules; also

contains some intraclastic limestone. Includes basal 8-to-10-m-thick, yellowish-brown-weathering, thin-bedded limestone that is burrow mottled, and contains abundant beds of intraclastic limestone. Goodwin Limestone forms massive cliffs and is about 300 m thick

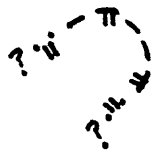
Cn **Nopah Formation (Upper Cambrian)**--Subsurface only. In adjacent areas consists of dolomite, mostly dark gray (fresh) and olive black (weathered); less commonly medium light gray (fresh) and light gray to light olive gray (weathered); lighter gray color commonly traverses depositional surfaces, and is probably related to diagenetic alteration. Dolomite is medium crystalline and thin to thick bedded. Contains discontinuous layers and nodules of moderate-brown to dusky-yellowish-brown weathering chert. Brachiopods and zones of trough cross-bedded oncoids are common. About 80-90 m below top of unit is a 35-m-thick dolomite interval similar in color and lithology to beds in the Pogonip Group; the dolomite is olive-gray, dusky-yellow, and medium-gray (fresh), and yellowish-gray to light-olive-gray (weathered), finely crystalline, very thin bedded, and burrowed, with common grayish-orange to dark-yellowish-orange mottles. Grayish-red to dusky-red stylolites are diagnostic of this interval. Nopah forms massive cliffs; complete thickness estimated at 360 m

Contact--Queried where location uncertain in cross section A-A' only

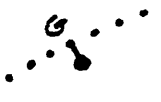
High-angle normal or reverse fault--Bar and ball on downthrown side. Barbed arrow shows direction and/or amount of dip. Cross bar indicates vertical dip. Dashed where approximately located, dotted where concealed, queried where location is uncentain

Oblique-slip fault--Bar and ball on downthrown side. Arrows show relative direction of offset; lateral offset in cross section is shown by T and A indicating motion toward and away. Dashed where approximately located, dotted where concealed, and queried where location is uncertain

Thrust fault--Sawteeth on upper plate. Dotted where concealed, queried where location is uncertain



Low-angle slip surface beneath gravity-slide block--Hachures on upper plate. Dashed where approximately located, dotted where concealed, queried where location uncertain



Fault location based on geophysical data from Pierce and Hoover (1986)--Bar and ball on presumed downthrown side

Syncline--Dashed where approximately located, dotted where concealed, queried where location is uncertain

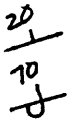
Anticline--Dashed where approximately located, dotted where concealed, queried where location is uncertain

Overturned syncline--Dashed where approximately located, dotted where concealed, queried where location is uncertain

Overturned anticline--Dashed where approximately located, dotted where concealed. Arrow points in direction of plunge of fold axis

Minor fold at outcrop scale--Arrow points in direction of plunge of fold axis

Strike and dip of beds

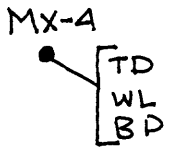


Inclined

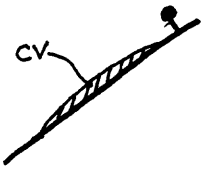
Overturned

⊕ Horizontal

Lineament of uncertain origin visible on aerial photographs



Exploratory water well--CSV-1 drilled in 1985 by U.S. Geological Survey for the Carbonate-Rock Aquifer Project of southern Nevada, and is described by Berger and others (1988). MX-4, 5, and 6 were drilled in 1981 by Ertec Western, Inc. (1981) for U.S. Air Force. Key to drill hole symbols: TD = total depth of drill hole; WL = water level recorded below land surface; and BD = depth to Paleozoic or Tertiary volcanic bedrock, below land surface (all values given in meters)



Calcite vein--Veins fill north- to northeast-striking fault planes and fractures in the Wildcat Wash area, southwestern Meadow Valley Mountains. Veins are 0.5- to 2-m-thick, and generally consist of white, laminated, coarsely crystalline calcite. Veins were precipitated from flowage of warm, bicarbonate ground water and represent a major plumbing works of an ancestral discharge in the carbonate-rock aquifer of the regional White River flow system. For greater detail on these features, see Schmidt (1994), and Schmidt and Dixon (1995)

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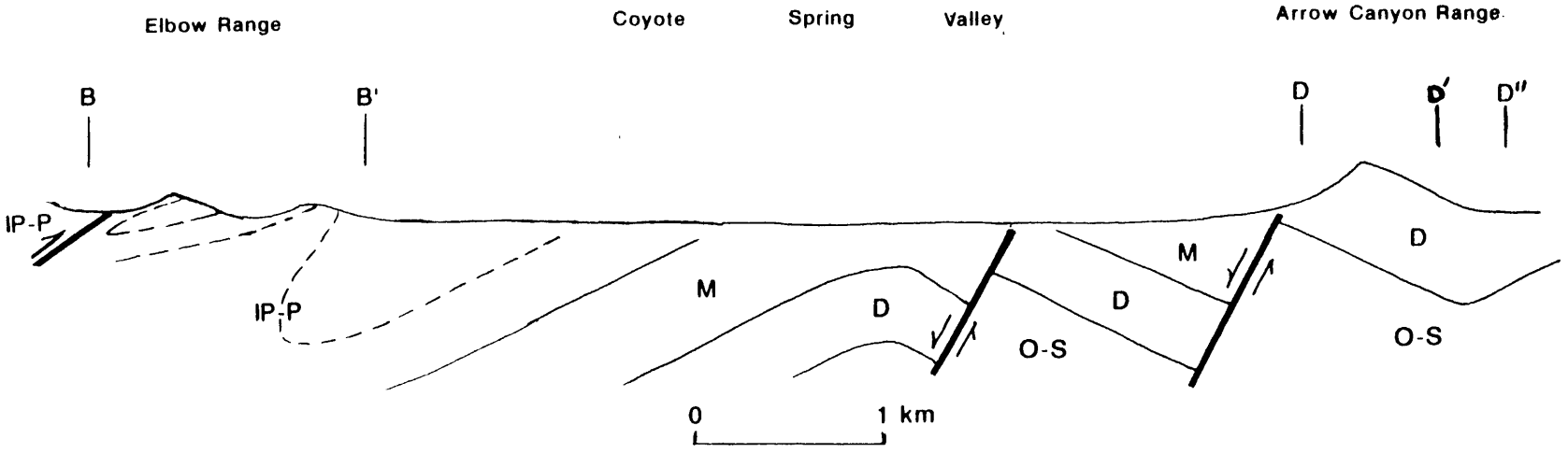

Figure 1. Sketch of simplified geology in the southern Wildcat Wash SW and Wildcat Wash SE quadrangles along cross sections C-C and D-D . Key to unit symbols: IP-P = Pennsylvanian and Permian; M = Mississippian; D = Devonian; and O-S = Ordovician and Silurian

CORRELATION OF MAP UNITS - WILDCAT WASH SE AND SW