COLUMNAR SECTION OF THE SIKSIKPUK FORMATION, SAVIOYOK CREEK, WISEMAN (D-4) QUADRANGLE, NORTHCENTRAL BROOKS RANGE, ALASKA

LAT 67°57'00" N., LONG 151°46'00" W.

EXPLANATION

ROCK TYPES

- Sandy siltstone — Sandy metasiltstone
- Siltstone — Metasiltstone
- Shaley siltstone — Slaty siltstone
- Silty shale — Silty slate
- Shale — Slate
- Carbonate
- Shaley chert — Slaty chert
- Siliceous shale — Siliceous slate
- Chert

MINERALS

- B Barite
- P Phosphate
- Pyrite
- Q Quartz

STRUCTURES

- Horizontal lamination
- Wispy lamination
- Concretion, nodule, or pebble — May be combined with other symbols. Filled where indeterminate
- Vein — May be combined with other symbols
- Fault — Arrows indicate direction of relative movement

FOSSILS

- Foraminifera
- Radiolarian
- Sponge spicules
- *Helminthopsis*
- *Ophiomorpha*
- Burrow

STRIKE N. 80° E.-N. 30° W.
DIP 43° SW. BELOW FAULT; 65° SW. ABOVE FAULT
VERTICAL SCALE 1 INCH = 4 METERS

Mapping by C.G. Mull, 1984.

SERIES	STAGE	GROUP	FORMATION	INFORMAL LITHOSTRATIGRAPHIC UNIT	THICKNESS, IN METERS	LITHOLOGY	SAMPLE NUMBER	FOSSILS	DESCRIPTION
Upper Permian(?)	Guadalupian(?)				85				
							84AKA3-29		SLIGHTLY METAMORPHOSED SHALE, cream-green with isolated yellow (limonite?) color bands to 3 cm wide and red color bands to 20 cm wide, mostly brown-green- to gray-green-weathering, very cherty, and slightly dolomitic(?); contains cubic pyrite and concretionary and vein-filling barite. Lower half of unit includes large (20 cm wide by 2 m long) zoned concretion composed of carbonate core and barite rim; upper half of unit contains quartz veins. Primary bedding destroyed by slaty cleavage. Top of unit covered with tundra and strewn with talus of Lisburne Group carbonate rocks from overlying thrust sheet
					80		84AKA3-28		
							84AKA3-27		
?—	?—			D					
							84AKA3-26		
					75				Soil cover and displaced block of unit D shale
					70		84AKA3-25	Simple spheres	
							84AKA3-24		
							84AKA3-23		SLIGHTLY METAMORPHOSED SHALEY CHERT TO SILICEOUS SHALE, INTERLAYERED WITH MINOR SHALE, medium-gray, weathering gray green; becomes darker and less siliceous upsection. Contains cubic, disseminated, and concretionary pyrite to 10 cm diam and rare barite and dolomite(?) crystals. Siliceous beds are wispy laminated, average 5 to 10 cm thick, and thin toward top; shale intervals average 1 to 5 cm thick and reach maximum of 1 m thick. Radiolarians and sponge spicules are present in siliceous beds but have been recrystallized (K.M. Reed, written commun., 1985). Abrupt change in dip at 67.3 m may indicate small-scale reverse fault. Unit quartz veined above fault and cleaved throughout. Contacts within unit are smooth and sharp, except where thicker shale intervals grade to siliceous beds; contact with overlying unit D is covered but probably gradational
				C	65				
							84AKA3-22		
					60		84AKA3-21		
							84AKA3-20	?	
					55		84AKA3-19		SLIGHTLY METAMORPHOSED SHALE, medium-gray, green-gray- and orange-brown- to red-brown-weathering, cherty, and slightly dolomitic(?); contains cubic pyrite, occasionally twinned, to 3 mm, and tabular, radiating, vein-filling, and concretionary barite. Bedding destroyed by bioturbation and slaty cleavage; black wispy lamination preserved. Radiolarians(?) present at top of unit and have been altered to barite(?). Unit sharply overlain by shaley chert bed of unit C
				B_2					
							84AKA3-18		
					50		84AKA3-17		
					45		84AKA3-16		
							84AKA3-15		
Lower Permian(?)	Leonardian(?)	Etivluk	Siksikpuk		40		84AKA3-14		SLIGHTLY METAMORPHOSED SILTY SHALE, medium- to dark-gray with isolated black and red-brown color bands, mostly green-gray- and brown-gray-weathering, very cherty, and slightly pyritic and dolomitic(?). Base of exposed interval is slightly coarser grained; upper middle of unit contains rare black pebbles(?) to 1 cm diam. Beds destroyed by bioturbation and cleavage, but black wispy lamination and bedding parallel and oblique burrows, 2 to 5 mm wide, are preserved. Vitrinite reflectance (R_o) values for unit average 3.52, and thermal alteration index (TAI) ranges from 3.9 to 4 (Chevron U.S.A. Inc., written commun., 1985), suggesting rocks reached lower limit of metamorphism. Unit grades upward into overlying shale of unit B_2
							84AKA3-13		
					35				
							84AKA3-12		
					30		84AKA3-11		
				B_1					
	—?—				25				
					20				Snow, gravel, and tundra cover
					15				
					10				
					5				
				?—			84AKA3-10		
							84AKA3-9		
							84AKA3-8	? (float)	
				A			84AKA3-7	*Endothyra bowmani*, *Ammodiscus* sp., *Glomospira* sp.	SLIGHTLY METAMORPHOSED SANDY TO SHALEY SILTSTONE AND INTERBEDDED SILTY SHALE, light- to medium-gray, tan- and orange-brown- to red-brown-weathering, very cherty, and slightly dolomitic; contains abundant finely disseminated and concretionary pyrite to 2 cm diam, which is occasionally surrounded by barite. Toward base, where siltstone is coarsest, unit contains horizon of white-weathering, black phosphate(?) pebbles to 2 cm diam. Siltstone beds are 2 to 10 cm thick, closely spaced, and appear to fine upward in part; in lower half meter of unit, siltstone beds are horizontally laminated and grade into burrowed horizon. Burrows, often pyritized, are present throughout unit and include *Ophiomorpha*. An isolated grazing trace, tentatively identified as *Helminthopsis*, can also be found. Mississippian foraminifera have been recovered (Chevron U.S.A. Inc., written commun., 1985) but are probably reworked from underlying Lisburne Group. Fracture(?) cleavage strikes E.-W. and dips 80° S. Overlying contact with unit B_1 is covered but probably gradational
					0		84AKA3-6 84AKA3-5 84AKA3-4 84AKA3-3		SLIGHTLY METAMORPHOSED CARBONACEOUS SILTY SHALE, black, lightening to dark gray upsection, red-orange- to brown-tan-weathering, and pyritic. Exhibits slaty cleavage and quartz veining. Contact with overlying Siksikpuk Formation sharp and slickenlidded, indicating some movement, probably a bedding-plane fault
Upper Mississippian(?)		Lisburne	Kuna(?)						

Section measured with Jacob's staff by K.E. Adams with assistance from D.A. Bodnar, E.E. Harris, and D.J. Gentry, July 1984.