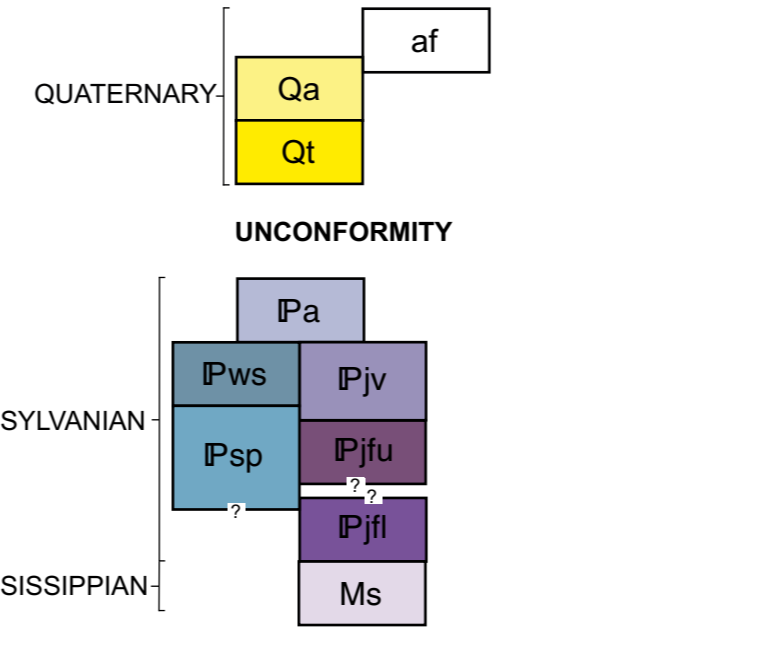


DESCRIPTION OF UNITS

- af ARTIFICIAL FILL (Quaternary) - Artificial fill mapped only in large dams
- Qa ALLUVIUM (Quaternary) - Unconsolidated silt, sand and gravel of present stream channels
- Qt TERRACE DEPOSITS (Quaternary) - Unconsolidated silt, sand, and gravel above present level of stream channels
- Pa ATOKA FORMATION (Pennsylvanian) - Predominantly poorly exposed olive-gray (SY32), olive-brown (SY21), to brownish-black (SY23), slightly silty, noncalcareous, poorly laminated shale and mudstone. Locally fossiliferous, weathers to "flakey" appearance. Very rarely contains ironstone or calcite nodules or concretions, exhibits "penic" structure, or is calcareous. Contains thin beds of laminated siltstone and thicker beds of sandstone. Sandstone typically is light-olive-gray (SY22 to SY61) to yellowish-gray (SY72) where fresh and grayish-orange (10YR7/4) where weathered. Muddy fine-grained and silty, very rarely medium-grained or bimodal with medium-sized grains supported in a fine-grained matrix, poorly to moderately sorted, and noncalcareous. Generally composed of about 95% quartz, 2-5% feldspar and rock fragments, and conspicuous white mica parallel to laminations; quartz rarely less than 80% or greater than 95%. Individual beds vary from several centimeters to several meters thick and average about 60 cm. Amalgamated beds common, forming resistant ridges and dip slopes easily identifiable on aerial photographs; some of these marker beds are mapped. Thicker beds are generally unstratified (corresponding to T<sub>6</sub> of Bouma sequence) to parallel-laminated (T<sub>7</sub>); thinner beds commonly are ripple cross-laminated (T<sub>8</sub>). Some beds exhibit low-angle, moderate- to long-wavelength, undulatory stratification. Contacted bedding and dish-and-pillar structures typical of some beds. Sole marks (ruts, grooves, and load casts, trace fossils) at base of sandstone beds locally common. Tops of sandstone beds typically grade upward to siltstone; ripples rare. Unfossiliferous except for local concentrations of plant debris on bedding planes throughout the formation and lowermost sandstone beds immediately above Johns Valley Formation that contain poorly preserved molds of brachiopods. Porosity typically is very low except where medium-grained, fossiliferous, and/or moderately sorted. Maximum thickness at least 6000 ft (2100 m), possibly as much as 11,700 ft (3600 m) south of Choctaw fault, top not exposed.
- Pws SPRIG SANDSTONE MEMBER (INFORMAL) OF WAPANUCKA FORMATION (Pennsylvanian) - Well-exposed, pinkish-gray (5YR6/1) to very pale orange (10YR8/2) or pale yellowish-orange (10YR6/6), mostly well-sorted, porous, medium-grained, stratified quartz arenite. Quartzite, mostly noncalcareous, locally with trace fossils and molds of corals. Beds typically 2 cm to 1 m thick, amalgamated, and mostly parallel-stratified, but locally planar tabular cross-stratified. Ripples present on tops of some beds. Shale clasts rare. Weathers to very waxy appearance. Locally includes thin beds composed entirely of fossil fragments and poorly exposed gray micrite. Exposed only in northwestern corner of quadrangle. Maximum thickness approximately 1000 ft (300 m) south of Choctaw fault.
- Pjv JOHN'S VALLEY FORMATION (Pennsylvanian) - Predominantly poorly exposed, pale-brown (5Y5/2) to moderate-yellowish-brown (10YR5/4), mostly noncalcareous, poorly laminated, slightly silty shale and mudstone. Some beds fossiliferous, weathers to "flakey" appearance. Other beds carboniferous, pervasively sheared. "Penic" structure locally developed. Contains thin beds of noncalcareous laminated siltstone and thin to medium-bedded sandstone. Sandstones mostly light-brown (5YR4) to grayish-orange (10YR7/4), varying from fine to coarse-grained, with rare granule-conglomerates, rarely calcareous or fossiliferous, and massive to parallel- or ripple cross-laminated. Composed of as much as 15% feldspar, 5% rock fragments, minor mica, and the remainder quartz. Sole marks and dish-and-pillar structures typical of some beds. Some sandstone marker beds mapped. Shale locally contains angular to rounded pebbles, cobbles, and boulders of chert and a wide variety of limestone rock types (micrites to biohermal granitoids and packstones). Other rock types within the shale include large masses of platy to very fissile, hard grayish-black (N2) shale with calcareous concretions, phosphatic(?) nodules, and disseminated pyrite. Limestone clasts have been correlated with lower middle Paleozoic limestone units exposed to the north and west; chert clasts may be Woodford Formation (Devonian), and many black shale masses may correlate with the Carney Formation (Mississippian). Maximum thickness approximately 3400 ft (1050 m) south of Choctaw fault, base not exposed.
- Psp "SPRINGERS" FORMATION (Pennsylvanian) - Poorly exposed, olive-black (5Y2/1) to light-olive brown (5Y5/6), fossiliferous, locally slightly silty, calcareous and noncalcareous shale with very minor interbedded laminated siltstone. Locally contains 5 cm to 25 cm, ellipsoidal, limonitized siderite(?) concretions with long axes parallel to bedding. Typically shows slight "penic" structure. Exposed only in northwestern corner of quadrangle. Approximately 350 ft (100 m) maximum exposed in quadrangle south of Choctaw fault, base not exposed.
- Pju JACKFORK GROUP UPPER PART (Pennsylvanian) - Predominantly well-exposed, yellowish-gray (5Y7/2) to light-olive-brown (5Y5/6), fine to medium-grained, quartzite, noncalcareous sandstone. Beds typically amalgamated and unstratified to stratified; ripple marks locally abundant. Sole marks are rare. Typically fractured and weathered to large, angular blocks. May correlate with Gamie Refuge Formation of other workers. Maximum thickness 2600 ft (800 m) south of Choctaw fault.
- Pjl JACKFORK GROUP LOWER PART (Pennsylvanian) - Predominantly well-exposed, yellowish-gray (5Y7/2) to light-olive-gray (5Y6/1), mostly fine-grained to rarely medium-grained, quartzite, noncalcareous sandstone and thin, poorly exposed shale and mudstone. Locally contains many thick-bedded (1-10 m) sandstone beds in amalgamated or shale-poor sequences locally tens of meters thick. Individual beds unstratified to poorly parallel-stratified. Locally sparsely fossiliferous (molds of brachiopods) or with abundant impressions of plant debris on bedding planes. Sandstone marker beds mapped locally. Sandstones commonly highly fractured and typically weathered to waxy or platy appearance. May correlate with Wilkshire Mountain Formation of other workers. Exposed only in southwestern part of quadrangle. Maximum thickness approximately 2000 ft (700 m) south of Windingstair fault.
- Ms STANLEY GROUP (MISSISSIPPIAN) - Predominantly poorly exposed, light-olive-gray (5Y5/2) to olive-gray (5Y4/1), fossiliferous, noncalcareous shale and thin siltstone with discoidal siltstone and sandstone masses and rare limonite concretions. Shale commonly appears sheared and/or contorted; "penic" structure typical. Shale weathers to "flakey" appearance. Siltstone rarely show cone-in-cone structure. Includes medium-dark-gray (M4) to dusky yellow (5Y6/4), hard, well-laminated, siliceous shale and siltstone with uncommon radiolaria and very light-colored luffaceous(?) shale. Unit also contains sandstone beds that average about 50 cm thick, varying from 5 cm to amalgamated beds as much as 10 m thick. Sandstone typically is light-olive-gray (5Y5/2), olive-gray (5Y4/1), to medium-dark-gray (M4), fine-grained, unstratified, and/or cross-stratified, and calcareous or noncalcareous. Some individual beds show slight normal grading; others contain medium-sized, rounded, frosted quartz or chert grains supported in a fine-grained matrix. Feldspar constitutes as much as 15% and rock fragments 100% of sandstone. Sorting is generally poor; sandstone beds typically silty and contain abundant intergranular mud. Stratification locally is contorted and sandstone beds pinch, swell, and occur as concordant to slightly discordant pools and lenses in the shale. Organic material and plant debris is disseminated throughout the sandstone and locally concentrated on bedding planes. Shale rip-up clasts and sandstone dikes locally abundant. Bases of sandstone beds typically planar, but sole marks (load, groove, and ruts casts, trace fossils) locally present. Porosity typically very low. Widely exposed only in southern part of quadrangle.

CORRELATION OF MAP UNITS

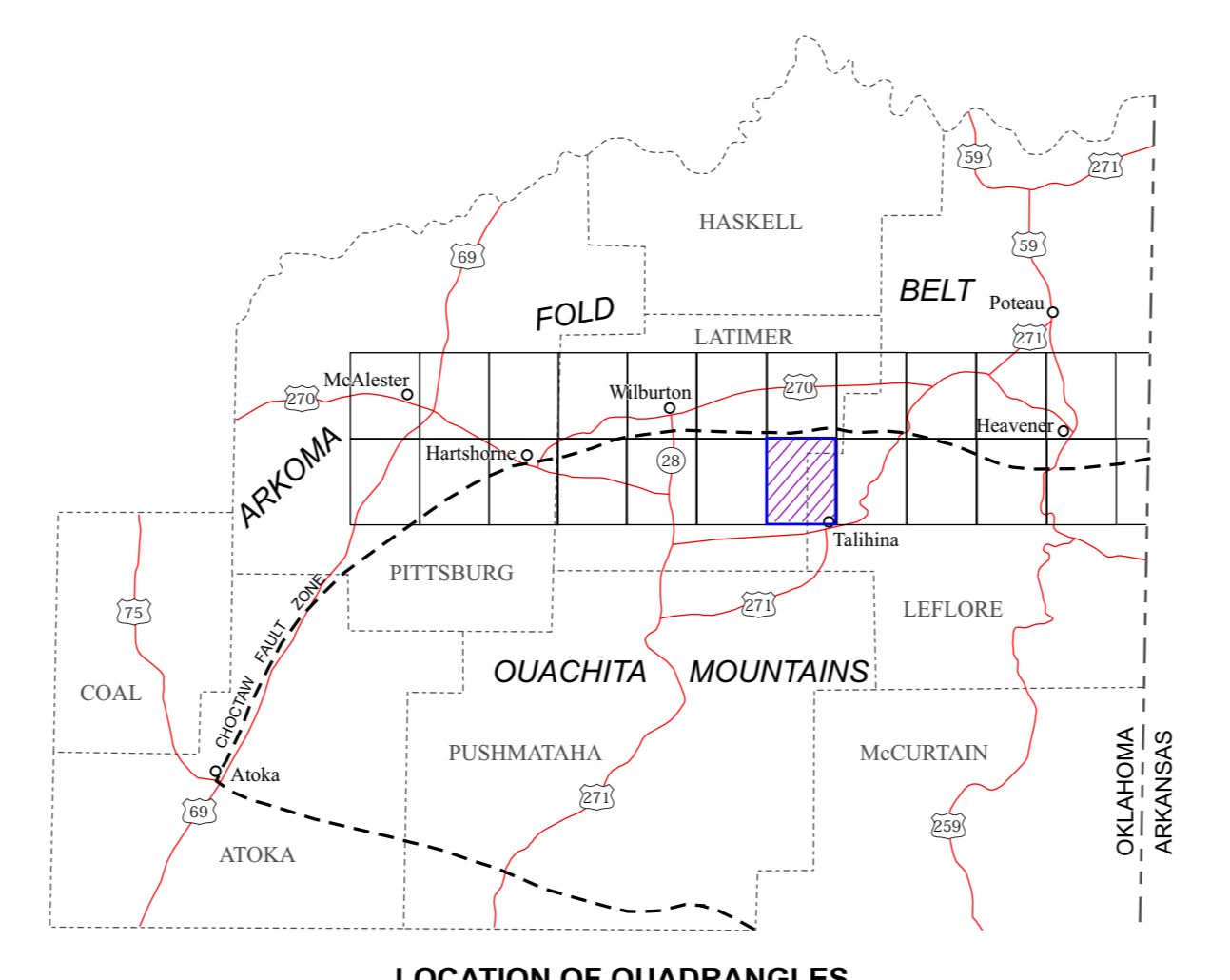


- SYMBOLS
- CONTACT - Dashed where approximately located
  - MARKER BED
  - THRUST FAULT - Sawtooth on upper plate; dashed where approximately located; dotted where concealed; queried where questionable
  - FAULT - Arrows show relative horizontal movement; dashed where approximately located; dotted where concealed
  - ANTICLINE - Showing crestline; dashed where approximately located; dotted where concealed
  - SYNCLINE - Showing troughline; dashed where approximately located; dotted where concealed; queried where questionable
  - STRIKE AND DIP OF BEDS
    - Strike and dip of beds, facing direction unknown
    - Vertical beds, facing direction unknown
    - Strike and dip of beds, upright
    - Vertical beds, ball indicates top of beds
    - Strike and dip of beds, overturned
  - OIL AND GAS WELLS
    - Oil well
    - Dry hole, abandoned

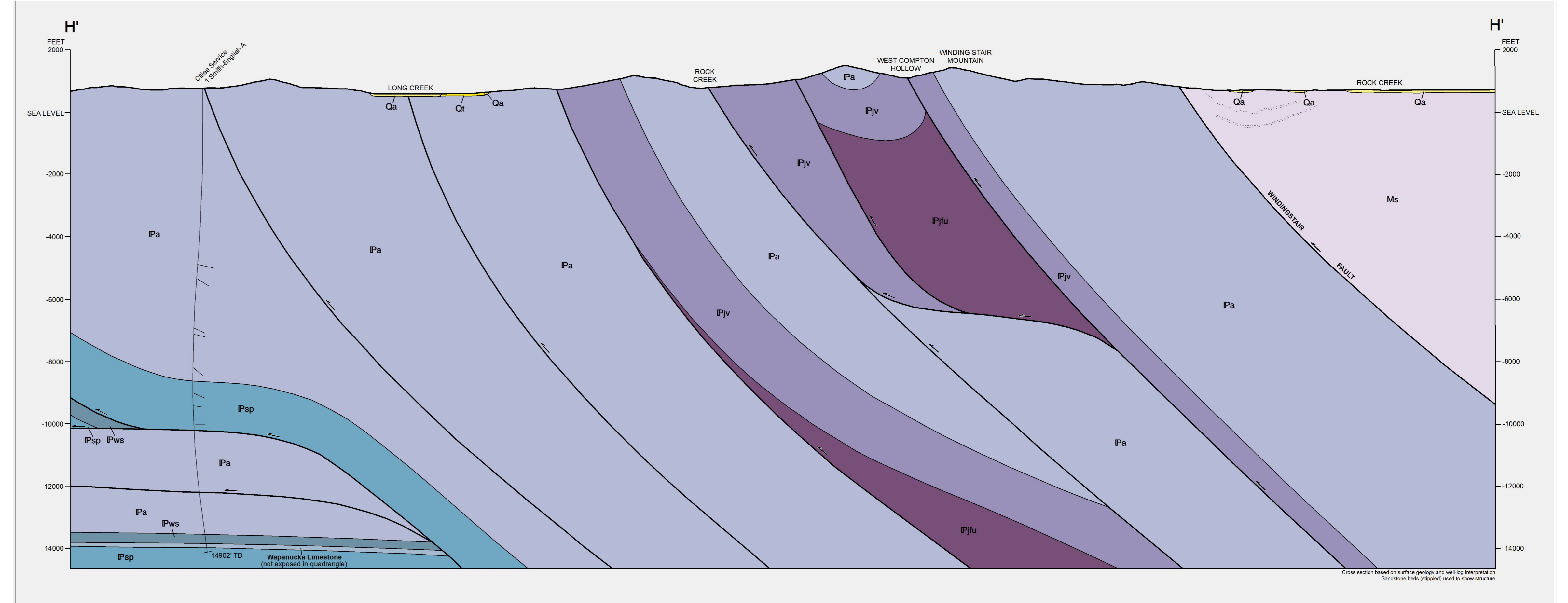
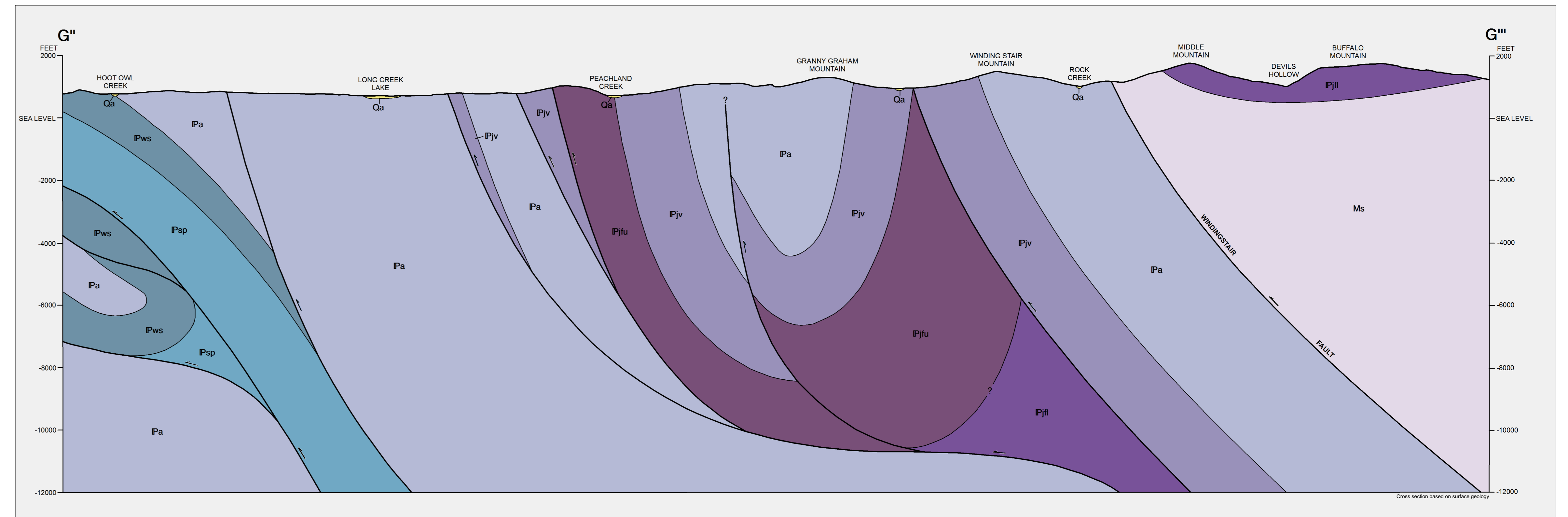
- LIST OF WELLS
- Cities Service 1 Smith-Engler A, Spud 10/20/83, TD 14,902'
  - Select 1 Warren, Spud 3/13/85, TD 225'

McALESTER	KREBS	WILBURTON	PANOLA	RED OAK	LEFLORE	SUMMERFIELD	WISTER	HEAVENER	BATES		
SAVANNAH	HARTSHORNE SW	HARTSHORNE	HOSGINS	DANFORD	BAKER MOUNTAIN	TALIHINA	BLACKWATER ROCK	LEFLORE SE	HODGSON	HONTLUBBY	LOWMYER

INDEX TO MAPPED QUADRANGLES



LOCATION OF QUADRANGLES



Map prepared, edited, and published by the Geological Survey in cooperation with the Oklahoma Highway Department, Oklahoma Water Resources Board, and Oklahoma State Soil Conservation Board.  
 Contour interval 20 feet.  
 National Geodetic Vertical Datum of 1929.  
 This map complies with National Map Accuracy Standards for sale by U.S. Geological Survey, Denver Colorado 80202, or Reston Virginia 20192 and by the Oklahoma Geological Survey, Norman Oklahoma 73069.  
 A folder describing topographic maps and symbols is available on request.  
 Geology by Neil H. Suneson and Charles A. Ferguson, 1988.

GEOLOGIC MAP OF THE TALIHINA QUADRANGLE, LATIMER AND LE FLORE COUNTIES, OKLAHOMA  
 by  
 Neil H. Suneson and Charles A. Ferguson  
 1990