OKLAHOMA GEOLOGICAL SURVEY
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GROSS-SANDSTONE ISOPACH MAP, UPPER MEMBER OF HARTSHORNE FORMATION

By
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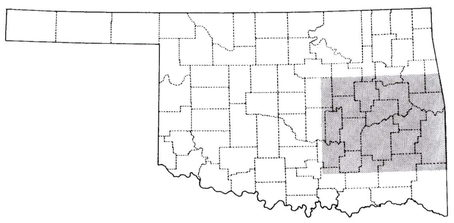

EXPLANATION

- Hartshorne Formation outcrop belt
- Principal areas having at least 50 ft of gross sandstone
- Principal areas having between 20–50 ft of gross sandstone
- Areas of coalbed methane production from Hartshorne Formation
- Principal transport direction of Hartshorne sands Regional cross section
- A — A′ Regional cross section
- Hartshorne field study area
- Cored well described in appendix 4
- 50 Isopach contour; dashed where inferred; hachures indicate areas of thinning. Contour intervals: 25, and 50 ft (as indicated)
- Major thrust fault, exposed or interpreted to occur at surface; sawteeth on upper plate
- U / D Normal fault; U, upthrown side; D downthrown side

APPROXIMATE LIMIT OF HARTSHORNE FORMATION (Based on well-log interpretations)

Upper Hartshorne sandstone absent north of coal split line

Coal split line

Mostly very thick (incised?) channel deposits some stacked or amalgamated; coal commonly absent

Upper Hartshorne interval in areas outside of main channel trends contain mostly shale and thin, shaly sandstone beds <10 ft thick

Very thick, elongate sandstone sequences consisting of incised(?) fluvial channel and marine (delta-front?) deposits; coal is commonly absent in thick sand trends

Area of apparent Upper and Lower Hartshorne coal beds

Area possibly containing Upper Hartshorne Member

Play limit

ANTICLINE

BACKBONE ANTICLINE

MILTON

FAULT

KEOKUK FAULT

STONEWALL FAULT

FRANKS GRABEN

LAWRENCE HORST

CHOCTAW FAULT

OKMULGEE MUSKOGEE MC INTOSH OKFUSKEE SEMINOLE OKEMAH HUGHES EUFAULA STIGLER SPIRO SALLISAW HASKELL POTTAWATOMIE HOLDENVILLE POTEAU WILBURTON HARTSHORNE PONTOTOC COAL ATOKA COALGATE JOHNSTON LATIMER LE FLORE

T16N T15N T14N T13N T12N T11N T10N T9N T8N T7N T6N T5N T4N T3N T2N T1N T1S

R5E R6E R7E R8E R9E R10E R11E R12E R13E R14E R15E R16E R17E R18E R19E R20E R21E R22E R23E R24E R25E R26E R27E

0 10 20 30 40 50 Miles

Gross-sandstone thicknesses were determined primarily by the author from gamma-ray and density logs. This sand-thickness map does not necessarily reflect net sandstone (having a porosity cutoff). Gross-sandstone determinations are conservative and approximate, and were interpreted from intervals having a sand/shale ratio of at least 40%, or interpreted from density logs as having a response apart from the known shale response. Significant subsurface-thickness interpretations in localized areas were included from Fields (1987), Rottmann (1986) and Donica (1978).