Conclusions on the Isern area.

Magnolia #1 Bayer, 7-20S-10W	Arbuckle penetration	84'
Hilligoss #1 Isern, 12-20S-11W	" "	21'
Derby #1 Bersheit, 12-20S-11W	" "	60'
Gypsy #1 Steckel, 31-19S-10W	" "	26'

All four of these wells penetrate enough Arbuckle to give either Purcell, zone 5, or a good estimate on it. The Arbuckle structure in in Isern area proper, gives the same relative picture as that shown by the top of the lime, a dip slightly south of east.

In the Isern area proper, both the Derby and the Hilligoss wells are producing from the Miller, which is absent due to erorsion in the Magnolia well. The Derby well and the Magnolia well found water in the top of the pre-Purcell. Because of the presence of Miller, it is probable that the Decorah outcrop is within a mile to the southwest of the Derby well.

The Steckel well has Arbuckle of about Purcell, zone 6, age at the top, had a pay zone in the base of the Purcell, and another pay zone in the top of the pre-Purcell. In the area near the Steckel, the pre-Purcell is the main porous zone, as the basal Purcell is highly variable in character. It is very probable that there is some erosional relief on the top of the pre-Purcell.

Hilligoss #1 Isern,
SW SE NE, 12-20S-~~10W~~ 11W,
Elevation 1785'

Pennsylvanian conglomerate 3305-3308'
3305-3308 Clay shales with rare chert at base.

Ordovician Top 3308' Sub-sea, minus 1523'
Arbuckle Top 3308' Penetration 21' Sub-sea, minus 1523'
3308-3317 Miller, zone 10. Oil at 3312'.
3317-3325 Purcell, zone 3.
3325-3328 Purcell, zone 4.
3328-3329 Purcell, zone 5. Sub-sea, minus 1543'.

3328
1785
1543

Hilligoss et al
Isren #1
Barton County, Kansas

Sec. 12; T.20S; R.11W.
SW SE NE
By A. S. Price

Samples examined 1740 to 3329
Total depth of well 3329

Base of Americus limestone 2125
Top of Tarkio limestone....2315
Top of Emporia limestone...2390
Top of Howard limestone....2535
Top of Topeka limestone....2635
Top of Douglas shale.....2930
Top of Lansing(Plattsburg
limestone).....3058
Top of "Siliceous lime"....3308

Ran 6 5/8" pipe @ 3283
Lowered 6 5/8" pipe to 3308

Pumped 483½ bbl. oil in 24 hours at 3329.

3300-3305 Clay and white to brown dense limestone. Pennsylvanian
Bulky residue (5 gram sample).

Plus ½ mm.

Chert---- Opalescent, rare faint brown.
Quartzose, chalcedonic.

Oolite--- Spherical, brown, hollow, plus ½ mm.

Dominant Shale---- Clay, gray-green, in aggregate.

Sand----- Fine silt, aggregates.

Pyrite--- Compound crystals, sharp corners.

Minus ½ mm.

Chert---- Chalcedony, crusts, dolocastic.

Dominant Shale---- As above.

Sand----- Loose grains 1/2 - 1/4 mm, very rare.
Very fine silt, aggregates.

Pyrite--- Compound crystals, sharp corners.

3305-3310 Clay and white to brown limestone. Pennsylvanian. Rare coarsely crystalline white to brown dolomite. Bulky residue (2 gram sample).

Plus ½ mm.

Chert---- Opalescent, faint brownish.
Dull, cloudy translucent, chalcedonic.
Quartzose, faint brown. One piece.

Dominant Shale---- Gray green. Penn.

Sand----- Very fine silt, aggregates.

Pyrite--- Compound crystals.

Minus ½ mm.

Chert---- Opalescent, normal to amber-brown.
Cloudy translucent.
Quartzose, brown.

Dominant Shale---- Gray-green. Penn.

Sand----- Very fine silt, aggregates.

Pyrite--- Compound crystals.

3310-3312 Dolomite brown coarsely crystalline. Cavings of Penn.
Bulky residue (5 gram sample).

Plus ½ mm.

Chert---- Opalescent to cloudy translucent.
Brown opalescent, pyrite inclusions.
Chalcedonic.
Quartzose, dolocastic.

Oolite--- Oolitoid bodies in chert. One piece.
Knobby oolites white and brown. Ones above were included under quartzose chert.

Dominant Shale---- Gray-green. Penn.
Very pale green, dolocastic.

Sand----- Fine silt. Aggregates.

Pyrite--- Compound crystals, dolocastic.

Minus ½ mm.

Chert---- As above.

Oolite--- Tiny oolitoid bodies in brown chert., replaced sand.
Knobby oolites as above.

Dominant Shale---- Pale green, dolocastic, pyritic.
Gray clay. Penn.

Sand----- Aggregates of fine silt.

Pyrite--- As above.

3312-3315 Dolomite, brown, coarsely crystalline. Oilstained.
Bulky residue (10 gram sample).

Plus ½ mm.

Chert---- Opalescent, colorless to brown, chunks have rough partial surface indicating origin as cavity filling.
Cloudy translucent.
Quartzose, brown, rare.
Dolocasts, quartzose, white.

Quartz--- Fragments of larger crystals.

Dominant Shale---- Gray, Penn.
Pale green, sandy.

Sand----- Fine silt. Aggregates.

Pyrite--- Crystal aggregates, dolocastic.

Minus ½ mm.

Chert---- Opalescent, colorless to brown, rough partial surfaces.
Cloudy translucent.
Quartzose, brown, rare.
Dolocasts, white, coarse, thin-walled. Abundant.

Dominant Shale---- Gray. Penn.
Pale green.

Sand----- Loose grains 1/2 - 1/4 mm. very rare.
Aggregates of very fine silt. Penn.

Pyrite--- Crystal aggregates, dolocastic.

Pipe let down from 3282 to 3308.

3315-3316 Dolomite, brown, coarsely crystalline. Faintly oilstained.
Medium residue (1 gram sample).

Plus ½ mm.

Dominant Chert---- Dolocastic, quartzose to dead white opaque.
Quartzose, dull, faint brown.

Oolite--- Oolitoid bodies in quartzose chert. One piece.

Shale---- Cavings of Penn.

Pyrite--- Crystal aggregates. Dolocastic.

Minus ½ mm.

Dominant Chert---- As above.

Oolite--- Some of dolocastic fragments show spherical cavities.

Shale---- As above.

Sand----- Loose grains 1/2 - 1/8 mm. Rare.

Pyrite--- Crystal aggregates.

3316-3317 Dolomite, brown, coarsely crystalline. Faintly oilstained.
Bulky residue (2 gram sample).

Plus ½ mm.

Dominant Chert---- Cloudy translucent, translucent, opalescent, milky and rare dead white opaque. Opalescent is most abundant.
Quartzose, brown, dolocastic.
Brown, phase of above opalescent.
Dolocasts, rare dead white.

Oolite--- Oolitoid bodies in chert. Rare.
Two in cluster, brown, smooth.

Shale---- Pale green. One fragment.

Minus ½ mm.

Dominant Chert---- Quartzose, brown, dolocastic.
Opalescent, with rare cloudy translucent and milky.
Brown phases of above. Rare.

Pyrite--- Compound crystals.

3317-3319 Dolomite, brown to white, coarse to medium crystalline. Faintly oilstained. Bulky residue (1 gram sample).

Plus ½ mm.

Dominant Chert---- Cloudy translucent to milky, dull.
Brown opalescent and chalcedonic.

Oolite--- White, poorly formed, in clusters. Tends to be dolocastic.
Abundant.

Minus ½ mm.

Dominant Chert---- Quartzose, clear brown, dolocastic, to dull milky and slightly dolocastic. The dull milky material is replaced sandy dolomite.
Opalescent and cloudy translucent.
Brown phases of same.

Oolite--- Loose, white 1/4 mm., spherical to ovoid, minutely rough.
Abundant.
Oolitoid bodies in chert. Rare.
Concentric, with both light and dark centers.

Shale---- Pale green, pyritic, platy.

Sand----- Loose grains, 1/4 - 1/8 mm. Rare.

Depth correction - 3319 = 3320.

3320-3321 Dolomite, brown to white, coarse to medium crystalline. Faintly oilstained. Bulky residue (1 gram sample).

Plus ½ mm.

Dominant Chert---- Cloudy translucent to milky and dull.
Opalescent to milky, the latter with inclusions.
Quartzose. Very rare.

Minus ½ mm.

Dominant Chert---- Cloudy translucent, mottled; to opalescent.
Quartzose, brown, slightly dolocastic.
Milky, totally cloudy phase of cloudy translucent.

Oolite--- Minute oolitoid bodies in cloudy translucent chert. Abundant.
Loose, white, spherical, 1/4 mm, relatively smooth.

Quartz--- Fragments of larger crystals.

Shale---- Pale green.

Sand----- Loose grains, 1/4 - 1/8 mm.
" " 1/8 - 1/16 mm.

3321-3325½ Dolomite, brown, medium crystalline. Faintly oilstained.
Bulky residue (2 gram sample).

Plus ½ mm.

Dominant Chert---- Cloudy translucent to opalescent, brownish tinge.
Milky, dull. Merely a totally cloudy phase of the cloudy translucent.
Dolocasts, dead white. Rare.
" , quartzose, faint brown. Rare.
Gray to brown, "smoky", banded, chalcedonic, rare oolitoid bodies.

Oolite--- Oolitoid bodies in chert. Rare.
Loose oolites, one white and one brown, rough.

Shale---- Pale green, platy.
" " , silky surface.

Sand----- Loose grains, plus ½ mm., rare.
Aggregates, partly quartzitic, 1/2 - 1/4 mm.

Minus ½ Mm.

Dominant Chert---- Quartzose, faint brown, mostly dolocastic.
Cloudy translucent, opalescent, to rare milky. Inclusions rare.
Brown phases of above, chalcedonic. Common.

Oolite--- Rare oolitoid bodies, mostly in chalcedony.
Loose, white and rare brown 1/2 - 1/4 mm., slightly rough. Common

Shale---- Pale green.

Sand----- Loose grains, 1/2 - 1/4 mm. rare.

3325½-3328 Dolomite, brown, fine to medium crystalline, sandy. Faint oilstain.
Bulky residue (1 gram sample).

Plus ½ mm.

Dominant Chert---- Milky, a phase of cloudy translucent, highly dolocastic.
Transparent to opalescent, also brown phase. Rare.
Colorless to brown, quartzose.

Oolite--- Oolitoid bodies in chert.

Minus ½ mm.

Dominant

Chert---- As above.

Oolite--- Oolitoid bodies in chert.
Loose, smooth, translucent, grayish, inclusions, spherical to flattened, ovoid. 1/4 mm.
Loose, spherical, white, 1/8 mm. Rare.

Shale---- Pale green to nearly white.

Sand----- Loose grains 1/2 - 1/4 mm. very rare.
" " 1/8 - 1/16 mm. " "

3328-3329 Dolomite, brown, fine to medium crystalline. Oilstained.
Bulky residue (5 gram sample).

Plus ½ mm.

Dominant

Chert---- Cloudy translucent to milky, somewhat dolocastic.
Quartzose, brown, somewhat dolocastic.
Opalescent to milky, also brown phase of same. Somewhat chalcedonic.
Yellow, with dark areas, irregular; peculiar glassy surface. Rare

Oolite--- Oolitoid bodies in cloudy translucent chert.
Concentric oolites in chalcedony.

Shale---- White clay soft, rare.
Dark green, rare.

Minus ½ mm.

Dominant

Chert---- As above.

Oolite--- As above.
Also smooth gray, with inclusions.

Shale---- Pale green to gray green, silky surface.

Sand----- Loose grains 1/8 - 1/16 mm.