LEGEND

Gravel · Rhyolite · Andesite · Qtz. Monz. Por. · Granodiorite · Shale & slate · Sandstone · Limestone (Dolomitic) · Dolomite · Chert

Mine: Area "X", Kansas-Missouri
Date Started: July 7, 1948
Date Stopped: July 20, 1948
Lease: Cherokee and Pittsburg Coal & Mining Co.

Site: Sec. 20, T.29S., R.25E.
Bearing:
Inclination: Vertical
Location: 1401' N & 67' W. of S.E. Corner, Sec. 20.

Co-ordinates of Collar — Bottom
North:
East:

Elev. of Collar: 943.08'
Elev. Water Table: 743'
Elev. of Bottom: 369'
Length of Hole: 574'
Driller: Sill & Sill Drilling Co.; Herman Sill.

Drill Hole No. A-4
Sheet 1 of 3
Scale One Inch = 20 Feet

Date Drilled	Elev.	Feet	Log Rec C	Log Rec S	Rock and Alt.	Geology	Condition of Hole	Int.	Core Recovery Ft.	Core Recovery Lbs.	Core Recovery %	Core Assay Sample No.	Core Assay Copper Total	Core Assay Copper Oxide	Sludge Recovery Fac	Sludge Recovery Lbs.	Sludge Recovery Tot. Lbs.	Sludge Recovery Lbs Req	Sludge Recovery %	Sludge Assay Sample No.	Sludge Assay Copper Total	Sludge Assay Copper Oxide	Comb. Ratio	Accepted Assay Copper Total	Accepted Assay Copper Product	Accepted Assay Copper Oxide	Accepted Assay Copper Product	Interval	Grouped Averages Copper Total	Grouped Averages Copper Product	Grouped Averages Copper Oxide	Grouped Averages Copper Product	Grouped Averages	Composite Assay	Remarks
	943.08'				Collar	0'																													

Cherokee formation

0' Brown, shaly clay soil
5' Brown ironstone & gy. shale
10' Brown lms. & grey shale & slates.
20' Limy black slate, thin coal — FeS2, tr. Tar
25' Limy, sandy grey shale — Tr. tar.
45' Limy grey sandstone — Tr. tar
50' Grey shale — Tar
55' Limy grey shales & slates — Tar. thin coal
65' Limy, sand grey shale — Tar(-)
70' Sandy, grey & tan shale — Tar(-)
105' Grey sandstone & tan lms. — tar(-)
115' Grey shale — Tar(+)
120' Sandy Grey Shale & slates — (Pinched Weir-Pittsburg seam)
815'± Thin coal (gas) Heavy FeS2
130' Light grey shale — some slates & SS. — tar(-)
135' Grey shale — tar

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						166'																													

Cherokee formation

Grey shale — some sand — Tar +
Brown lms. — Tar(-)
185' Grey shale & slate — (Tar + oil)
190' Brown sandstone — oil(-)
192'± Sandy grey shale & slate — Tar + oil(-)
210' Brown sandstone — Tar + oil(-)
212'± Tar (-)
Grey shales
Sandy — Tar +
Tar -
245' — some oil
Brown sandstone — Tar ±
270' shale & slates at base.
Tr. coal FeS2 Tar +
Dark grey shale — Tar(-) — some slates
Tar(+) FeS2
320'
325' Tar(+) Lt. grey shale & slate
Tar(+) Black shale & slate
610' 333'

Boone formation — Warsaw

Cream-white lms. — tr. wh. chert — Heavy FeS2 — Tr. lt. blue-gr. chert.
345' Dirty brown lms. — wh. & bluegy. chert (oil)
350' Tan lms. - white & greywhite chert (oil)
360' Tan & white mottled lms. — wh. & mottled wh. chert. CaCO3
362' Light Buff lms. - white & grey spotted chert.

8" Hole, Cased to 344'
6" Hole to Bottom

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Date Drilled	Elev.	Feet	Log Rec C	Log Rec S	Rock and Alt.	Geology	Condition of Hole	Int.	Core Recovery Ft.	Core Recovery Lbs.	Core Recovery %	Core Assay Sample No.	Core Assay Copper Total	Core Assay Copper Oxide	Sludge Recovery Fac	Sludge Recovery Lbs.	Sludge Recovery Tot. Lbs.	Sludge Recovery Lbs Req	Sludge Recovery %	Sludge Assay Sample No.	Sludge Assay Copper Total	Sludge Assay Copper Oxide	Comb. Ratio	Accepted Assay Copper Total	Accepted Assay Copper Product	Accepted Assay Copper Oxide	Accepted Assay Copper Product	Interval	Grouped Averages Copper Total	Grouped Averages Copper Product	Grouped Averages Copper Oxide	Grouped Averages Copper Product	Grouped Averages	Composite Assay	Remarks
						374'																													

Boone formation — Warsaw

Buff lms. - white (brown spotted chert)
Grey & buff lms., white & grey spotted chert — Tr. FeS2, CaCO3
Buff & Cream white lms., lt. gy. chert — Heavy FeS2, CaCO3
Cream white lms, "cotton rock"
Tan Lms., white chert
Short Creek oolite — tan lms, white & grey chert
531' 412'
Tan & white limestone, white charts
430' Cream white lms., trace white chert & FeS2 — light blue grey chert FeS2(-)
440' (ZnS(-)) Tan & white lms. — "cotton rock" — wh. chert — coarse FeS2 — Tr. ZnS.
445'

Burlington - Keokuk

455' Tan limestone — FeS2(-) — "cotton rock chert" — " — " — dirty white chert — Tr. FeS2
443' 500' Tan lms. — heavy white chert
510' Tan limestone, slightly dolomitic - massive white chert
530' Brown dolomite & Tan lms. - massive white chert
403' 540' (Tr. ZnS) Brown lms. - slightly dolomitic - massive wh. chert & light grey chert — weak ZnS shine
545' Dark brown & grey dolomite - white & lt. grey chert
550' Tan lms. - white & grey chert.

Grand Falls

560' Brown dolomite - white & grey chert.

Reeds Spring

369' 574' End.

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