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GEOLOGICAL REPORT

API: 15-053-21377

COMPANY	McGinness ENERGY CO. (31434)
LEASE	Woydziak 1-26
FIELD	Stoltenberg-Heiken
LOCATION	1460 FSL & 1725 FEL
SECTION	26 TOWNSHIP 17S RANGE 10W
COUNTY	ELLSWORTH STATE KANSAS
CONTRACTOR	DUKE DRLG RIG 2 (5929)
COMMENCED DRILLING	MON. NOV. 8, 2021
COMPLETED DRILLING	SUN. NOV. 14, 2021
RTD	3280 FEET LTD 3279 FEET
MUD UP AT	2500'± FEET MUD TYPE CHEMICAL
SAMPLES SAVED FROM	2600 FEET TO 3280 FEET
DRILLING TIME KEPT FROM	2600 FEET TO 3280 FEET
SAMPLES EXAMINED FROM	2600 FEET TO 3280 FEET
GEOLOGICAL SUPERVISION FROM	2355 FEET TO 3280 FEET

ELEVATIONS
KB 1799 FEET
DF 1797 FEET
GL 1791 FEET
MEASUREMENTS ARE ALL FROM: KB

CASING
8⅝" AT 284'
5½" AT 3270'

ELOG SUITES
CNCD (NO PE)
DIL
MICROLOG
NO SONIC

NOTES: MUD SYSTEM - MUDCO, SURF CSG CMT - HURRICANE SVC. WATER - WELL, FUEL - BESTHERN O/G, GAS DETECTOR - MBC LOGGING AND LEASING, DSTS - TRILOBITE TSTG, LOGGING - ELI WL SVC, PROD CSG CMT - HURRICANE SVC.

CORES - NONE

Remarks:

THE MEC WOYDZIAK 1-26 WAS DRILLED AS AN in-fill well in the STOLTENBERG-HEIKEN FIELD in WESTERN ELLSWORTH COUNTY KS. 3D SEISMIC helped to PROVIDE the DRILLSITE in this mature AREA. FOUR (4) DSTS WERE TAKEN COVERING THE LSG G ZN AND ARBUCKLE. 5½" PROD CSG WAS SET AT 3270 FT to further evaluate the ARBUCKLE FORMATION BASED ON DST 4.

Ken LeBlanc

Daily Penetration

7am

Date	Depth
11-6-21	MIRT, RIG UP
11-7-21	NO ACTIVITY
11-8-21	SPUD 9:30AM, SET 8⅝" AT 284'
11-9-21	DRLG 574'
11-10-21	DRLG 1940'
11-11-21	DRLG 2740'
11-12-21	3020-DST 1, DST 2
11-13-21	3170-CFS, DST 3
	DST 4
	RTD 3280-1481
	AT 4:45AM 11-14-21
11-14-21	3280, TAKING DST 4, TIH A/DST 4
	CTCH 60", TOOH
	f/LOGS, ELI WLSVC
	Finished logging
	AT 1:20AM 11-15-21
11-15-21	3280 - preparing to run 5½" prod csg

Bit Record

Number	Size	Make	Type	Depth Out	Feet	Hours
1	12¼	JZ	PDC	284	284	2
2	7⅞	JZ	HA20TL	3280	2996	59
		TOTAL BIT HOURS →		3280		61

AVG. PENETRATION RATE: D-RTD
53.77 FPH

GENERAL INFORMATION

RAN 7 JTS NEW 23# 8⅝" surf csg, TALLIED AT 273.76', Set AT 284' w/195sks 60/40 (3%cc, +2% gel), PLUG DWN AT 4pm 11-8-21, CMT DID CIRC. by Hurricane Svc.

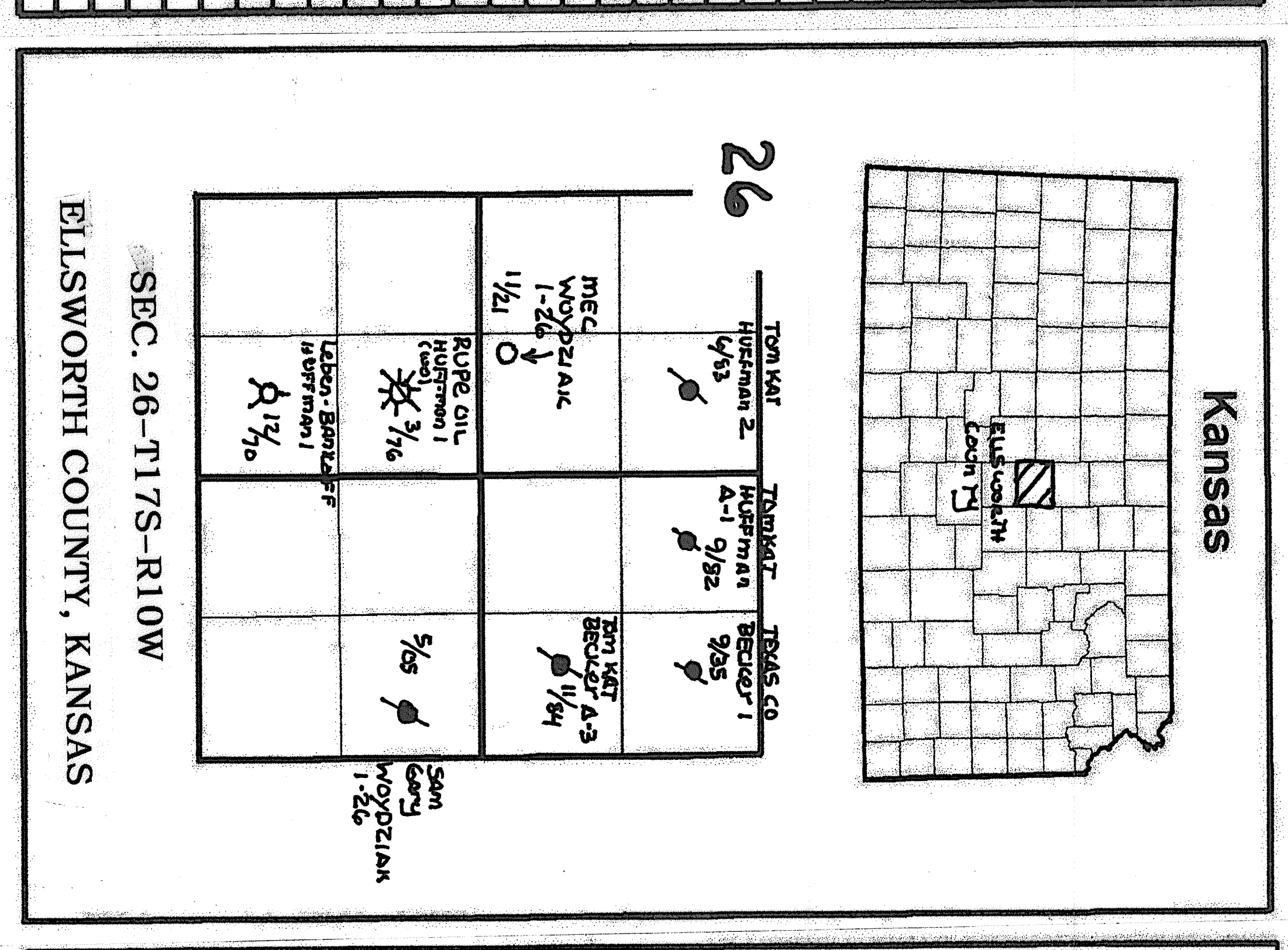
RIG MAKE: IDECO H35, DBL, panther pits
PWR: CAT C15
PUMP: EMSCO D300 stroke: 14", Liners 6"
PWR: CAT C16
RIG PWR: CAT 3406
DP: 4½" XH, wt 16.6 #/ft, OD: 6⅛", ID: 2¼"
DC: #16 - Length 467.51', OD: 6¼", ID: 2¼"

TOOL PUSHER: DION VASQUEZ

Formation Tops

	Sample Tops	Corrected Sample Tops	Electric Log Tops	Subsea Datums
B/SURFACE CASING	284		284	
T/STONE CORRAL			523	+1276
STOTLER			2242	-443
HOWARD			2446	-647
QUEEN HILL SHALE	2712		2712	-913
HEEBNER SHALE	2796		2794	-995
BRN LS	2914		2912	-1112
LANSING	2931		2926	-1128
LANSING "J" "G" ZN	3014		3013	-1214
STARK SHALE	3140		3140	-1341
B/KC	3203		3198	-1399
MARMATON			3204	-1405
B/PENN conglomerate			3230	-1431
ARBUCKLE	3267		3266	-1467
RTD LTD	3280		3280	-1480

Reference Well: TOM KAT HUFFMAN 2, NE NW SE 26-17S-10W



SEC. 26-T17S-R10W
ELLSWORTH COUNTY, KANSAS

Legend

Sandstone	Limestone	Chert	Coal/ Carb. Shale
Siltstone	Dolomite	Granite Wash	Conglomerate
Shale	Anhydrite/ Gypsum	Granite	oolitic/ oomoldic

Drilling Rate Minutes/Foot 5 10	Depth	LITHOLOGY	Sample Descriptions	SAMPLE %	Hot Wire Chromatograph 25u 50u 75u 100u 125u

5" 10"
480
500
20
T/ANHYDRITE
B/ANHYDRITE
540
(BREAK IN DRILL TIME)
2600
KING HILL SHALE
9.0,60,3"
50
WOB 32
RPM 75
PP 800
SPM 60
2700
QUEEN HILL SHALE
9.0,60,3"
7AM THUR 11-11-21 DRLG 2740'
50
HEEBNER SHALE
2800
(TORONTO)
DOUGLAS SHALE
50
9.0,60,3"
2900
BRN LS
LANSING
50
9.1,53,1"
5" 10"
3000
1
2
CTCH 60" 1DST 2
7AM FRI 11-12-21 PROD 1DST 2 AT 3020'
CFS 45"
CFS 45"
50
9.1,53,1"
CFS 45"
N.S.
3100
N.S.
CFS 45"
STARK SHALE
7AM SAT 11-13-21 3170-CFS
CFS 45"
9.4,54,2"
5" 10"
3200
BKC
WOB 36K
RPM 75
PP 800
SPM 60
50
3
(ARBUCKLE)
CFS 60"
CFS 60"
4
50
CFS 60"
HW
SHALE gas
150u
HW-15u
HW-55u
HW-20u
HW-15u
HW-20u
Trip gas
NO SAMPLE
MUDCO AT 40' WT 8.6, VIS 37 WL NC, CHL 195 LCM 2
MUDCO AT 855' WT 8.6, VIS 28 WL NC, CHL NC LCM 0
MUDCO AT 2086' WT 9.6, VIS 29 WL NC, CHL 33K LCM 0
MUDCO AT 2856' WT 9.0, VIS 53 WL 8.8, CHL 9.6K LCM 2
SHORT TRIP 3020 - 30 STDS CTCH AT 3020 - 60 min PIPE STRAP AT 3020 - 2.52 LONG TO BOARD - WINDY SHT AT 3020 - 3/4°
PIPE STRAP AT 2740 - 2.56' LONG TO BOARD - WINDY
MUDCO AT 3020' WT 9.1, VIS 51 WL 6.0, CHL 8K LCM 2
MUDCO AT 3270 WT 9.4, VIS 53 WL 9.6, CHL 8K LCM 2
3275 - SHORT TRIP 10 STDS CTCH 60" TOOH F/DST 3
3280 CFS 30"
3280 CFS 60"

⊙ - CIRCULATE FOR samples
C - DRILL pipe connection

SHT AT 284' - 3/4°

Geologist on location AT 2355'

DISPLACE mud system AT 2500'±

DRLG 4 BIT 2 JZ TAUREX 7⅞" HA20TL JETS 3-15'S in AT 284'

LS tan and cem med xln to occ., tr/y LACED w/CHALK, fossils

LS cem-lt gray lesser tan fn xln dn grades to med ool, fos.

shales BLACK, carb

LS tan fn xln dn

shales gray, dk gray

LS tan-brn fn xln dn, lesser LS tan-gray fn-med ool., chalk thru-out

shales gray, dk gray

LS tan-brn fn xln dn, lesser LS tan fn-med ool., chalk thru-out

LS tan fn xln dn, Laced w/chalk, some very slightly ool.

shales BLACK

LS cem-tan fn xln dn to weathered & small amts of tan-brn fn ool.

LS cem-tan and some med xln to fn subool. grades to chalky LS

LS tan and lt gray fn xln dn fn ool. some dk gray clasts grades to chalky LS

LS tan and brn fn xln dn grades to weathered w/ organics, sparse A gray, fresh opaque

shales BLACK, carb.

LS gray fn xln dn, some lightly ool.

shales gray, green, dk gray

LS cem and tan fn-med ool. grades to chalky LS; sparse A dk gray, fresh opaque

shales gray, dk gray

shales gray, dk gray

shales lt green, green, reddish brn and brn, soft

shales lt gray to silver, micac, soft - green

shales lt gray to silver App., silty and sandy, mi cac. Some soft, few dk gray w/pyrite

LS cem-brn fn and some subool.

shales lt gray-silver App. silty and sandy

LS tan fn xln dn

shales lt gray, gray, micac.

LS cream-brown fn and some med xln dn

LS brn fn xln dn

LS cream-brn fn and some med xln ool, subool.

LS cream-wht fn-med ool. grades to chalky LS
shales gray to BLK
LS brn fn xln dn
shales gray, dk gray - silver

LS tan-brn fn xln dn, slightly ool.

shales gray-silver, micac.
LS brn fn xln dn
shales gray

LS DA(?) brn thru coarse, tan to cream ool., oomoldic, good, ev to v good, poor matrix, NO SHOW of oil or gas in mud or sample ... very strong odor, fr ... to cream ... and ... sptd ...

DK brn spts

Fair odor, LS cem and tan fn to med ool., and some oomoldic poor ... lesser ool., fair odor, lt ... dull to fair gold fluor ... small tan sptd stn, ... assoc. chalk ...

LS tan fn xln dn, ... chalky ... fair gold fluor ...

shales gray

LS cem-tan fn xln dn, chalky LS

LS cem-tan fn xln dn, chalky LS
shales gray

LS cem and tan fn xln dn, chalky LS, v sl ool., NO shows on orgas

Faint to FAIR ODOR, LS cem and tan ool. fossils to chalky ool., LS, assoc. ... thru-out, NO shows oil ...

LS cem-tan med-coarse ... ringed w/ cal. calcite matrix, on some grades to chalky ool. LS
shales BLK

shales gray - blk

LS cem-tan fn xln dn

LS cem and tan fn xln dn w/assoc. chalky LS

shales BLK to dk gray

LS tan fn xln dn, some subool. grades to chalky LS

LS cem-tan fn xln dn to chalky LS thru-out
shales gray, gray-green

LS tan-brn fn xln dn, some fn-med ool., assoc. chalky LS thru-out

shales lt gray, gray, clayey soft, lesser gray-green

LS tan and cem fn ool. w/fn inclusions and assoc. chalky LS interbedded w/shales maroon to brick red, clayey w/ gray shales and chalk to clay

SST white to maroon w/reddish brn tint med and some coarse grain, pr friable, and to subrnd grain in wht matrix, NO SHOWS

shales maroon to reddish brn, clayey, soft, silty, lesser lt grn
A wht-cem fresh, opaque to varic. clayey

[SAMPLE DESCRIPTIONS OF ARBUCKLE BELOW]

RTD 3280-1481 AT 4:45AM SUNDAY 11-14-21
CFS - 60"
SHT AT 3280 - 3/4°

TOOH f/DST 4 - TIH W/BIT
CTCH - 60"
TOOH F/LOGS
ELI WLSVCS Finished Logging w/two passes AT 1:20AM MON 11-15-21

LTD 3279-1480

BASED ON the RESULTS OF DST 4, IT WAS DECIDED to RUN 5½" PROD. csg near RTD FOR FURTHER evaluation

NOTE: LEAH KASTEN FINISHED THE WELL, taking over while DST 4 was being TRIPPED OF THE HOLE. THE LOGGING by ELI WL SVC.

3267 - 3275
FAINT ODOR, dolo crm - to tan med and coarse xln to fn ool, VDULL to NO fluor wet, WITH tan sptd yellow gold fluor dry dry to fn ool., occ small shows of DK BRN oil, some JAGGED AND LUSTRE in fair inter xln ... AND small vugs, none to tan sptd stn, ASSOC. A varicolored (yellow - orange, tan, lt gry), fresh opaque AND subop. HW-15u, Recycled HW-5u

3275 - 3280
Fair to strong odor, dolo crm to lt gray med to some coarse xln, lesser RHOMBIC, lesser w/good inter xln and vugs, some w/good rhombic, fair gold fluor wet, vdull to none dry, small thru good SHOWS clear and tan Live (oil does fluor) tan and brn sptd stn, FAST CUT, most staining on RHOMBIC pos HW-20u Recycled HW-5u

Drilling Rate Minutes/Foot 5 10	Depth	LITHOLOGY	Sample Descriptions	SAMPLE %	Hot Wire Chromatograph 25u 50u 75u 100u 125u

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DST 1) 3000- 3020 [Lansing G Zn]
MIS-RUN

Slid Tool Fourteen (14)
feet - TOOL OPENED
Needed to add another joint
of pipe - decision made to
condition hole and retry DST

DST 2) 3012-3020
(Lansing G Zone)
Times: 30-60-45-90

Slid Tool Six (6) to Bottom

1st open: BOBOB in 30 seconds, built to 752.44 inches - GTS as tool was being
shut-in - NO GAUGES
(weak surface blowback - died)

2nd open: BOBOB immediately gauging gas

	time	orfice	Inches of H20	volume
	10"	3/8"	9.07	79.76 MCFG
	20"	3/8"	10.51	84.65 MCFG
	30"	3/8"	11.16	86.85 MCFG
	40"	3/8"	11.92	89.44 MCFG
++ **	45"	3/8"	12.24	90.52 MCFG

(NO Blowback)

++ - took gas sample
** - DID NOT Flare or Burn Gas at hose in bucket

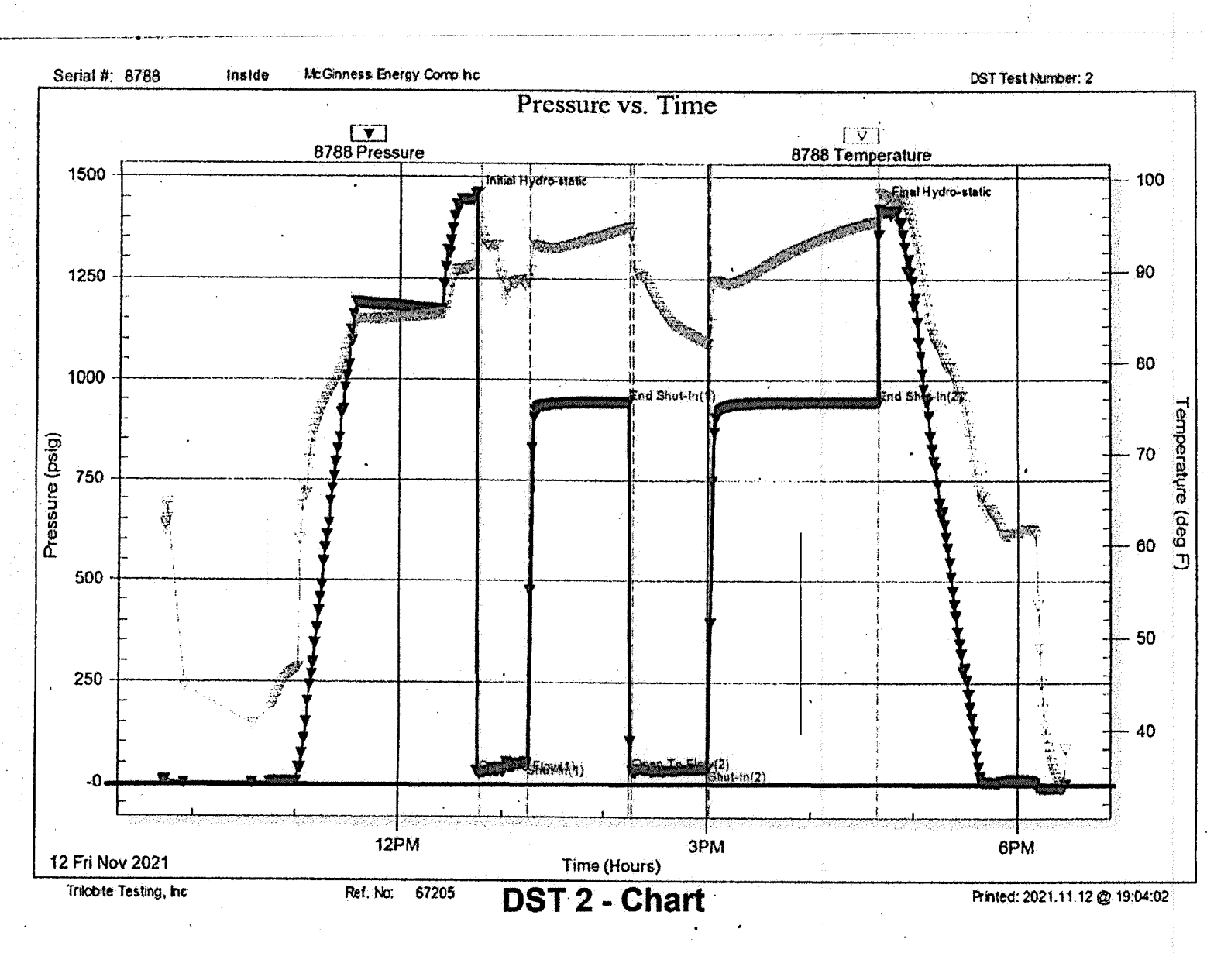
Rec: 41' Gassy Oil Specked Mud
(5% gas, 95% mud)
41' Total Fluid - ALL in Drill Pipe

chlorides of mud system: 4,600 ppm
chlorides of formation fluid: NOT APPLICABLE
resistivity of formation water: NOT APPLICABLE

(electronic recorders)
IHYD: 1445 psig
IFP: 26-52 psig
IBHP: 943 psig
FFP: 34-38 psig
FBHP: 943 psig
FHYD: 1421 psig
TEMP: 94 degrees F

Tester: Matt Smith: Trilobite Testing, LLC, Pratt Kansas District
NOTE: Conventional DST (dual packers, safety joint, electronic recorders
circulating sub, jars, shale packer, portal)

NO bottom sampler



DST 2 - Chart

DST 3) 3238 - 3275

(Arbuckle)

Times: 30-30-30-30

1st open: weak blow to 1/2 inch in bucket - NO GTS
(NO Blowback)

2nd open: no blow - NO Gas to Surface
(NO Blowback)

Rec: NO Gas in Pipe
1' Mud (100% mud)
1' Total Fluid - ALL in Drill Pipe

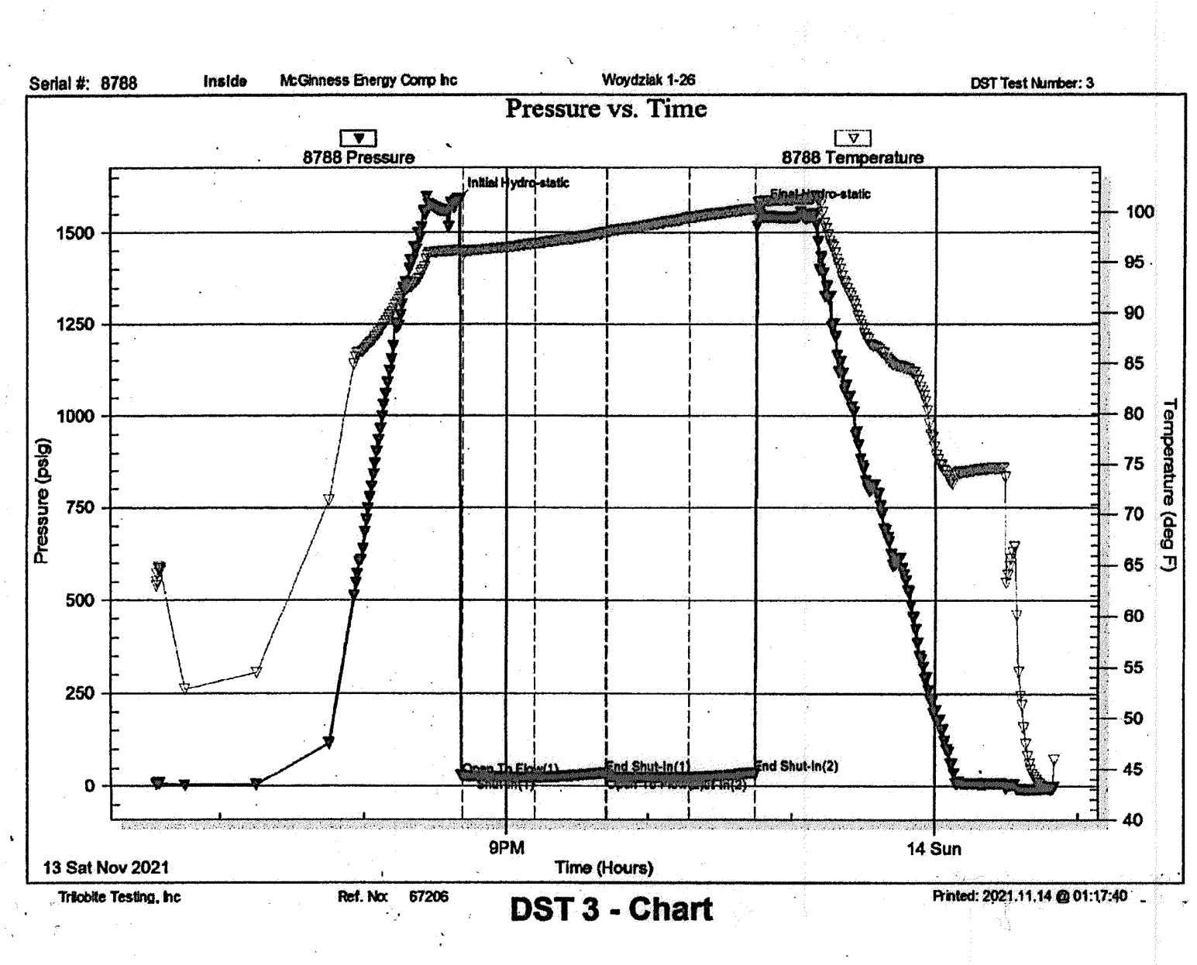
chlorides of mud system: 8,000 ppm
chlorides of formation water: NOT APPLICABLE
resistivity for formation fluid: NOT APPLICABLE

(electronic recorders)
IHYD: 1586 psig
IFP: 29-24 psig
IBHP: 36 psig
FFP: 26-24 psig
FBHP: 37 psig
FHYD: 1555 psig

TEMP: 96 degrees F

Tester: Matt Smith: Trilobite Testing, LLC, Pratt Kansas District
NOTE: Conventional DST (dual packers, electronic recorders, safety
joint, Portal, jars, shale packer)

NO bottom sampler



DST 3 - Chart

DST 4) 3274 - 3280

(Arbuckle)

Times: 30-60-60-120

1st open: strong BOBOB in 23 minutes, built to 15.28 inches - NO GTS
(weak surface blow to 1/4 inch then died)

2nd open: strong BOBOB in 30 minutes, built to 22.10 inches - NO GTS
(weak surface blow to 0.33 inches, then died)

Rec: 112' Gas in Pipe

108' Clean Oil
(100% oil - 39.6 deg API)

63' Gassy Oil Cut Mud
(5% gas, 92% oil, 3% mud)

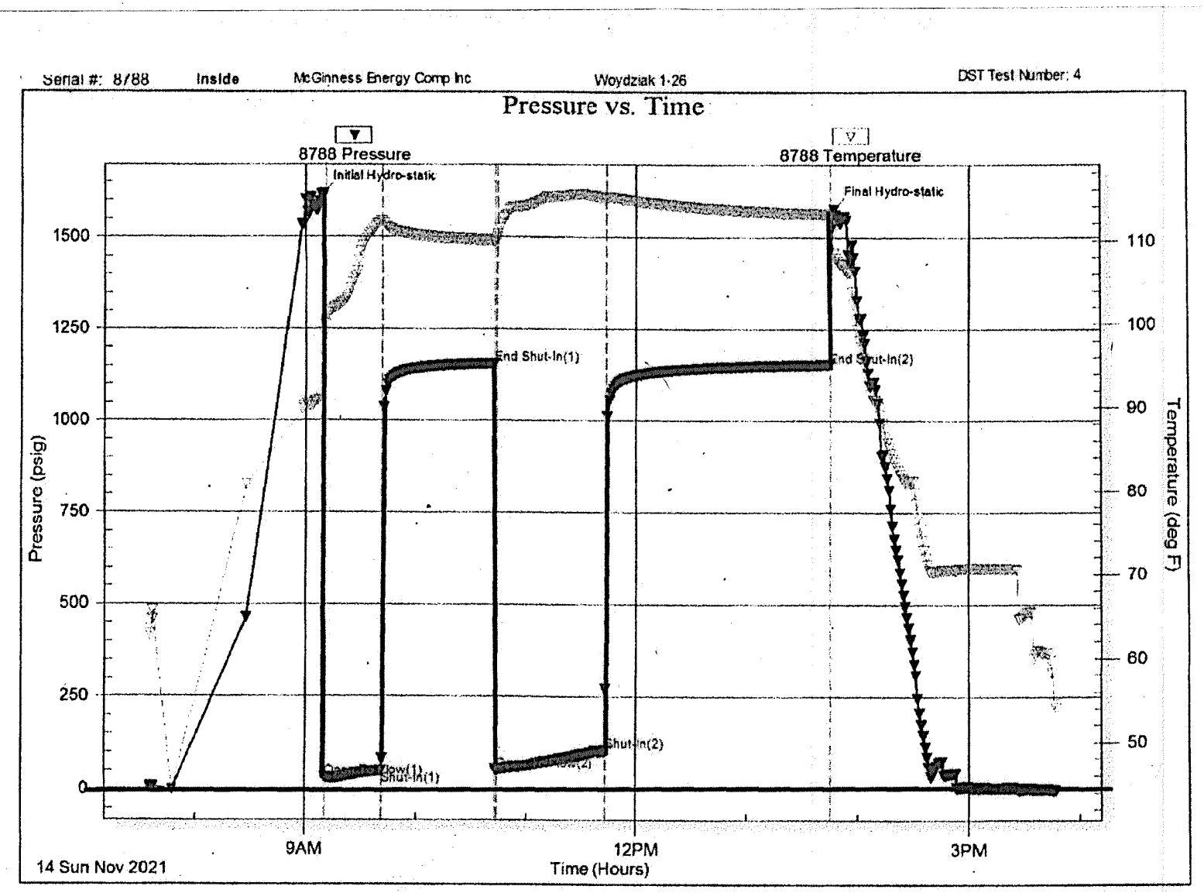
64' Gassy Oil Cut Mud
(5% gas, 40% oil, 55% mud)
[NO WATER on grindout]
235' Total Fluid - ALL IN Drill Pipe

(electronic recorders)
IHYD: 1613
IFP: 32-48
IBHP: 1156
FFP: 52-104
FBHP: 1153
FHYD: 1574

TEMP: 100 degrees

Tester: Matt Smith: Trilobite Testing, LLC, Pratt Kansas District
NOTE: Conventional DST (dual packers, safety joint, electronic recorders,
jars, portal, shale packer)

NO bottom sampler



DST 4 - Chart