Noble Petroleum, Inc.

GEOLOGICAL REPORT
DRILLING TIME & SAMPLE LOG

REPORT PREPARED BY FRANK S. MIZE/GEOLOGIST

FRANK S. MIZE LICENSED GEOLOGIST 365 KANSAS

API#: 15-115-21,431

COMPANY	Noble Petroleum, Inc.
LEASE	Harvey #1
FIELD	WC
LOCATION	650' FSL & 1,892' FEL
SEC	35
TWSP	21S
RGE	4E
COUNTY	Marion
STATE	Kansas
CONTRACTOR	C&G Drilling, Rig #1
SPUD	7-18-12
COMP	7-30-12
SAMPLES SAVED FROM	1700'
TO	RTD

RTD = 2700 LTD = 2702

ELEVATION

K.B. 1416

D.F.

G.L. 1410

DEPTH MEASURED FROM KB

Log ___ Drilling ✓

CASING

Surface 8 5/8" @ 226'

Production 5 1/2" @ 2690'

Electric Logs

CNL/CDL/DIL/BHCS

FORMATION	SAMPLE	E LOG	DATUM	A. GeoR	B. CHL	C. CHL
Oread	1471	1471	-55		-81	
Heebner	1508	1507	-93		-116	
Douglas	1536	1536	-120		-142	
Brown	1727	1728	-312	-290	-318	
Lansing	1772	1773	-357	-345	-369	-352
Stark	2074	2075	-659	-651	-677	-658
Hushpuckney	2103	2103	-687	-678	-705	-684
BKC	2131	2131	-715	-705	-733	-712
Marmaton	2184	2184	-768	-750	-787	-764
Mississippian	2274	2274	-858	-853	-885	-853
Kinderhook	2331	2332	-916	-993		*-890
Hunton	2450	2450	-1034	-1121		*-1029
Viola	2480	2480	-1064			
Simpson	2600	2599	-1183			
Arbuckle	2635	2637	-1221			

*-??? = Scout Top

REFERENCE WELLS

A. C SE NE SE 35-21S-4E Range Oil, #1 Savage

B. C SW SE SW 2-22S-4E Kansas Crude, #1 Preheim

C. 80' N N2 N2 NW 36-21S-4E Oil Properties, #1 Davis Slocombe

DRILLING TIME MINUTES/FOOT

1650

Brown Lime 1727 -311

Lansing 1772 -356

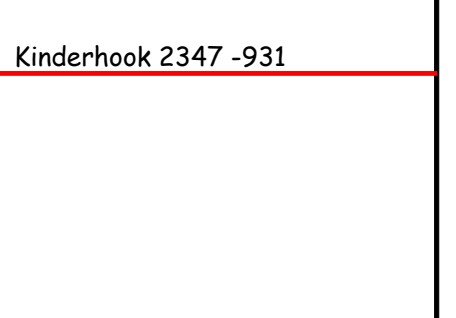
vis 37 wt 9.35 lcm 1.5# wl 10.4

Stark 2074 -658

Hushpuckney 2103 -687

BKC 2131 -715

Marmaton 2184 -768


2288' 15" x8

2288' 30" x18

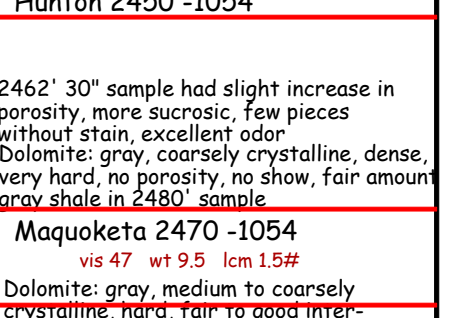
Mississippian 2274 -858

2288' samples
Chert: off white to blue green, about 80% is tripolitic, scattered spotted stain, slight show free oil, extremely fiant odor, fluorescence in 10% of 15" sample, only 5% of the 30" sample, no gas bubbles in any of the Miss samples, most chert barren

Miss Lime 2310 -884

Kinderhook 2347 -931


2452' 30" x15


2462' 30" x16

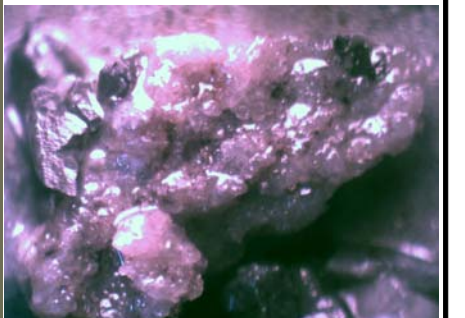
Hunton 2450 -1054

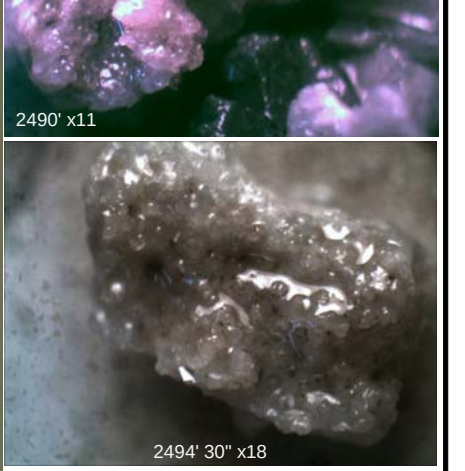
2462' 30" sample had slight increase in porosity, more sucrosic, few pieces without stain, excellent odor
Dolomite: gray, coarsely crystalline, dense, very hard, no porosity, no show, fair amount gray shale in 2480' sample

Maquoketa 2470 -1054

vis 47 wt 9.5 lcm 1.5#

Dolomite: gray, medium to coarsely crystalline, hard, fair to good intercrystalline and vuggy porosity, good show free oil, strong odor, gold flu in 45% of 15" & 30" 2494.5' sample, all samples 2490 & 2494.5' carry very light oil sheen


2490' x11


2494' 30" x18

Dolomite: brown to light brown, coarsely crystalline, very dense, trace sucrosic w/good intercrystalline porosity, no show, trace chert

Dolomite: gray to light brown, coarsely crystalline, very dense, no show, trace Sandstone: amber, medium grained, well sorted, fair silica cement, good intergranular porosity, no show, much chert

Dolomite: gray, fine crystalline, poor intercrystalline porosity, no show, much gray chert

Dolomite: gray, fine crystalline, poor intercrystalline porosity, no show, much gray chert, trace Sandstone: off white, fine to medium grained, sub-ang, fair sorting, good cement, poor intergranular porosity, ns

dolomitic cement

2600

Simpson 2600 -1184

Dolomite: gray, fine crystalline, poor intercrystalline porosity, no show, much gray chert and pyrite

Shale: reddish brown to gray to green, arrenaceous

Shale: green, waxy

Simpson SS 2618 -1202

Sandstone: off white, fine to medium clear grains, sub rounded, fair sorting, good silica cement, good intergranular porosity, no show

Sandstone: off white, fine to medium clear grains, sub rounded, fair sorting, good silica cement, fair to good intergranular porosity, no show, fair amount pyrite

Shale: gray to black

Arbuckle 2636 -1220

Dolomite: light brown to beige, medium crystalline, arrenaceous, little visible porosity, no show

Dolomite: gray to light beige, fine crystalline, dense, very poor intercrystalline porosity, no show no show

2650

Dolomite: gray, fine crystalline, dense, very poor intercrystalline porosity, some arrenaceous,

Dolomite: light brown fine to medium crystalline, very dense, little visible porosity, no show, trace green shale

Dolomite: gray to light brown, coarsely crystalline, dense very poor intercrystalline porosity, no show, trace pyrite

Dolomite: light brown to gray, medium to coarsely crystalline, some dense, some w/excellent intercrystalline & vuggy porosity, no show, trace pyrite

Dolomite: gray, coarsely crystalline, dense, trace vuggy porosity, no show, trace white chert and pyrite

vis 4+ wt 9.4 lcm 4#

2700

Comments:

Formation Test No. 1 Interval Tested from 2264 ft. to 2288 ft. Total Depth 2288 ft.

Packer Depth	2259 ft. Size 6 3/4 in.	Packer depth	ft. Size 6 3/4 in.
Packer Depth	2264 ft. Size 6 3/4 in.	Packer depth	ft. Size 6 3/4 in.
Depth of Selective Zone Set			
Top Recorder Depth (Inside)	2245 ft.	Recorder Number	30035 Cap. 10,000 P.S.I.
Bottom Recorder Depth (Outside)	2285 ft.	Recorder Number	3851 Cap. 5,700 P.S.I.
Below Straddle Recorder Depth	ft.	Recorder Number	Cap. P.S.I.
Mud Type Chem	Viscosity 37	Drill Collar Length 178 ft.	I.D. 2 1/4 in.
Weight 9.3	Water Loss 10.4 cc.	Weight Pipe Length 0 ft.	I.D. 2 7/8 in.
Chlorides	1,100 P.P.M.	Drill Pipe Length 2053 ft.	I.D. 3 1/2 in.
Jars: Make STERLING	Serial Number 3	Test Tool Length 33 ft.	Tool Size 3 1/2-IF in.
Did Well Flow? NO	Reversed Out NO	Anchor Length 24 ft.	Size 4 1/2-FH in.
Main Hole Size 7 7/8	Tool Joint Size 4 1/2 4 FH in.	Surface Choke Size 1 in.	Bottom Choke Size 5/8 in.

Blow: 1st Open: 1/4" Blow- Died in 11 min NOBB

2nd Open: No Blow- No Build NOBB

Recovered 1 ft. of CO 100% CO

Recovered 31 ft. of OS Mud 1% OIL 99% MUD

Recovered 32 ft. of TOTAL FLUID

Recovered ft. of

Recovered ft. of

Recovered ft. of

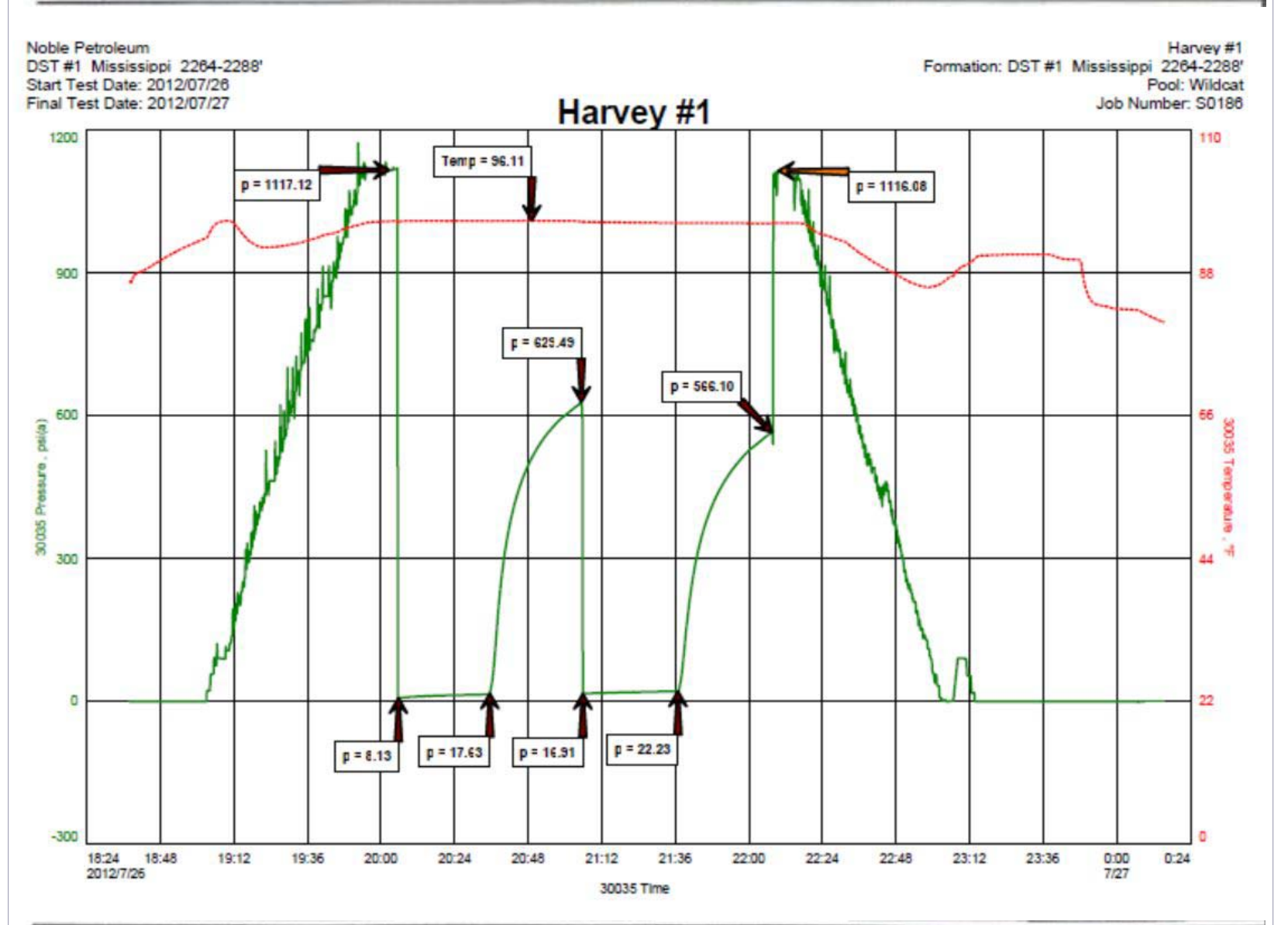
Remarks:

TOOL SAMPLE: 2% OIL 98% MUD

Price Job | Other Charges | Insurance | Total

Time Set Packer(s) 8:05 PM Time Started Off Bottom 10:05 PM Maximum Temperature 96

Initial Hydrostatic Pressure		(A) 1117 P.S.I.	
Initial Flow Period	Minutes 30	(B) 8 P.S.I. to (C)	18 P.S.I.
Initial Closed In Period	Minutes 30	(D) 629 P.S.I.	
Final Flow Period	Minutes 30	(E) 17 P.S.I. to (F)	22 P.S.I.
Final Closed In Period	Minutes 30	(G) 566 P.S.I.	
Final Hydrostatic Pressure		(H) 1116 P.S.I.	



Formation Test No. 2 Interval Tested from 2434 ft. to 2452 ft. Total Depth 2452 ft.

Packer Depth	2429 ft. Size 6 3/4 in.	Packer depth	ft. Size 6 3/4 in.
Packer Depth	2434 ft. Size 6 3/4 in.	Packer depth	ft. Size 6 3/4 in.
Depth of Selective Zone Set			
Top Recorder Depth (Inside)	2415 ft.	Recorder Number	30035 Cap. 10,000 P.S.I.
Bottom Recorder Depth (Outside)	2449 ft.	Recorder Number	3851 Cap. 5,700 P.S.I.
Below Straddle Recorder Depth	ft.	Recorder Number	Cap. P.S.I.
Mud Type Chem	Viscosity 50	Drill Collar Length 178 ft.	I.D. 2 1/4 in.
Weight 9.5	Water Loss 10.4 cc.	Weight Pipe Length 0 ft.	I.D. 2 7/8 in.
Chlorides	1,100 P.P.M.	Drill Pipe Length 2223 ft.	I.D. 3 1/2 in.
Jars: Make STERLING	Serial Number 3	Test Tool Length 33 ft.	Tool Size 3 1/2-IF in.
Did Well Flow? NO	Reversed Out NO	Anchor Length 18 ft.	Size 4 1/2-FH in.
Main Hole Size 7 7/8	Tool Joint Size 4 1/2 4 FH in.	Surface Choke Size 1 in.	Bottom Choke Size 5/8 in.

Blow: 1st Open: 3" Blow- Built to BB in 1 3/4 min NOBB

2nd Open: 2" Blow- Built to BB in 2 min NOBB

Recovered 1008 ft. of CO 100% CO GRAVITY: 30.5 @ 60 degrees F

Recovered 194 ft. of Muddy Oil 52% OIL 48% MUD

Recovered 1202 ft. of TOTAL FLUID

Recovered ft. of

Recovered ft. of

Recovered ft. of

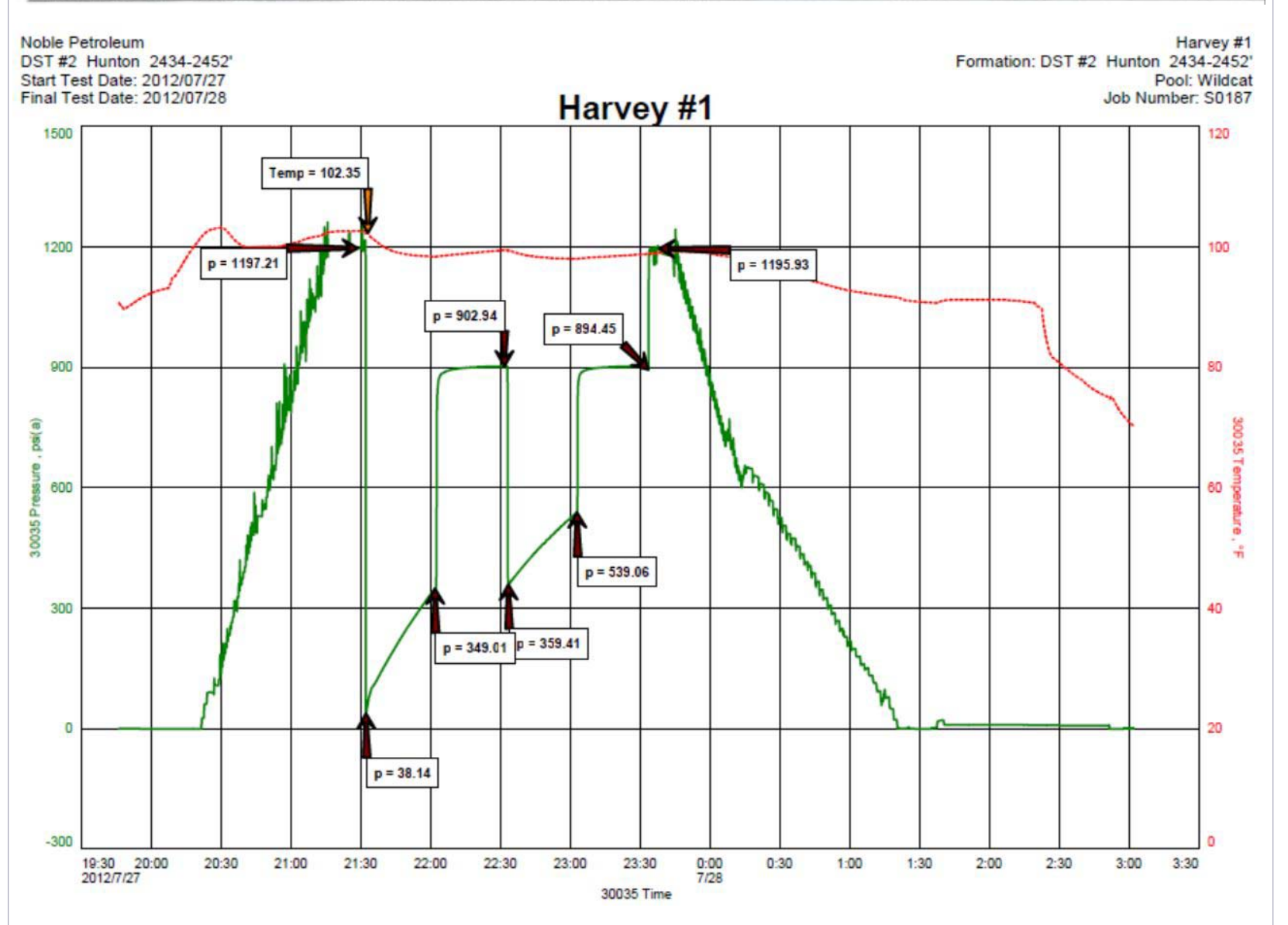
Remarks:

TOOL SAMPLE: 100% CO

Price Job | Other Charges | Insurance | Total

Time Set Packer(s) 9:32 PM Time Started Off Bottom 11:32 PM Maximum Temperature 102

Initial Hydrostatic Pressure		(A) 1197 P.S.I.	
Initial Flow Period	Minutes 30	(B) 38 P.S.I. to (C)	349 P.S.I.
Initial Closed In Period	Minutes 30	(D) 903 P.S.I.	
Final Flow Period	Minutes 30	(E) 359 P.S.I. to (F)	539 P.S.I.
Final Closed In Period	Minutes 30	(G) 894 P.S.I.	
Final Hydrostatic Pressure		(H) 1196 P.S.I.	



Formation Test No. 3 Interval Tested from 2480 ft. to 2495 ft. Total Depth 2495 ft.

Packer Depth	2475 ft. Size 6 3/4 in.	Packer depth	ft. Size 6 3/4 in.
Packer Depth	2480 ft. Size 6 3/4 in.	Packer depth	ft. Size 6 3/4 in.
Depth of Selective Zone Set			
Top Recorder Depth (Inside)	2461 ft.	Recorder Number	30035 Cap. 10,000 P.S.I.
Bottom Recorder Depth (Outside)	2492 ft.	Recorder Number	3851 Cap. 5,700 P.S.I.
Below Straddle Recorder Depth	ft.	Recorder Number	Cap. P.S.I.
Mud Type Chem	Viscosity 47	Drill Collar Length 178 ft.	I.D. 2 1/4 in.
Weight 9.4	Water Loss 8.8 cc.	Weight Pipe Length 0 ft.	I.D. 2 7/8 in.
Chlorides	1,100 P.P.M.	Drill Pipe Length 2269 ft.	I.D. 3 1/2 in.
Jars: Make STERLING	Serial Number 3	Test Tool Length 33 ft.	Tool Size 3 1/2-IF in.
Did Well Flow? NO	Reversed Out YES	Anchor Length 15 ft.	Size 4 1/2-FH in.
Main Hole Size 7 7/8	Tool Joint Size 4 1/2 4 FH in.	Surface Choke Size 1 in.	Bottom Choke Size 5/8 in.

Blow: 1st Open: 3" Blow- Built to BB in 1 1/4 min NOBB

2nd Open: 3" Blow- Built to BB in 1 1/4 min NOBB

Recovered 212 ft. of OS Muddy WTR 2% OIL 53% WTR 45% MUD

Recovered 410 ft. of Mud Specked WTR 99% WTR 1% MUD

Recovered 976 ft. of Mud Specked WTR 99% WTR 1% MUD (down hole)

Recovered 63 ft. of Muddy WTR 68% WTR 32% MUD

Recovered 1661 ft. of TOTAL FLUID

Recovered ft. of PH: 7

Remarks: RW: .68 @ 100 degrees F

CHLORIDES: 9,000 ppm

TOOL SAMPLE: 2% OIL 95% WTR 3% MUD

Price Job | Other Charges | Insurance | Total

Time Set Packer(s) 2:14 PM Time Started Off Bottom 4:14 PM Maximum Temperature 98

Initial Hydrostatic Pressure		(A) 1214 P.S.I.	
Initial Flow Period	Minutes 30	(B) 42 P.S.I. to (C)	556 P.S.I.
Initial Closed In Period	Minutes 30	(D) 921 P.S.I.	
Final Flow Period	Minutes 30	(E) 558 P.S.I. to (F)	797 P.S.I.
Final Closed In Period	Minutes 30	(G) 921 P.S.I.	
Final Hydrostatic Pressure		(H) 1211 P.S.I.