

PETERRA Energy Services

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GEOLOGIST REPORT
15-095-00137-00137 DRILLING TIME AND SAMPLE LOG

Operator: Imperial Oil Properties
Lease: Klaver-Matson Well #: 21-1 "OWWO"
Field: Wildcat
Location: 330' fwi & 330' fwi (NW NW NW)
SEC: 21 TWP: 29S RGE: 06W
County: Kingman State: Kansas

ELEVATION
KB: 158
DF: 158
GL: 157
All measurement are from
the: Kelly Bussing

Contractor: Duke Drilling - Rig #8
Commenced: 11/13/2006 Completed: 11/18/2006
Rotary Total Depth: 4620' Log Total Depth: 4619'
Samples Saved from: 4230' to 4620'
Drilling time kept from: 4227' Old RTD to 4620'
Samples examined from: 4227' to 4620'
Geological Supervision: 4227' to 4620'
Mud up @: 4227' Mud type: Chemical Drispac

CASING RECORD
Conductor: None Set
Surface: 8 5/8" @ 255'
Production: Ran 104 fts. of new
5 1/2" casing and set @ 4612'
w/ 175 sxs of cement.

FORMATION	SAMPLE		NEW LOG		STRAT COMP
	TOP	DATUM	TOP	DATUM	
Heebner	3096	-1511	3096	-1511	4 high
Lansing	3332	-1747	3332	-1747	5 high
B/Kansas City	3521	-1936	3516	-1931	
Mississippian	4153	-2576	4156	-2571	17 high
Old RTD	4227	-2642			
NEW FORMATION & LOG TOPS					
Kinderhook Sh.	4451	-2866	4452	-2867	8 low
Misener Sand	4545	-2960	4547	-2962	8 high
Viola Dolomite	ABSENT		ABSENT		
Simpson Sand	4562	-2977	4561	-2976	
New RTD	4620	-3035			
New LTD			4619	-3034	

ELECTRIC LOG SURVEYS
DIL, CN/CDL, MICRO
Computer Analysis Log (CAL)

☐ Klaver-Matson 21-1
☐ #1 Matson

21

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DRILL STEM TESTS

#	Interval	I/FP	Time	ISIP	Time	FFP	Time	FSIP	Time	IHP - FHP	Recovery
1	4154'	na	30"	na	na	na	30"	180#	na	na	2700' gip, 30' gpm, 90' vsogcm 30' sogcm, 60' mdy silt wtr
2	4168'	na	30"	na	na	na	30"	920#	na	na	G/Z5', 215' gsocm, 60' ocw & 120' wtr
3	4188'	na	30"	na	na	na	30"	1360#	na	na	511' soc mdy wtr
4	4208'	na	30"	na	na	na	30"		na	na	

NEW DRILL STEM TESTS (OWWO)

4432'	28#	30"	1573#	45"	54#	30"	1565#	30"	2023#	120' drig mud
4555'	47#	30"	1687#	45"	91#	30"	1689#	30"	1976#	
4555'	91#	30"	1687#	45"	924#	30"	1689#	30"	2122#	550' gormw (20% gas, 4% oil)
4570'	941#	30"	1687#	45"	1688#	30"	1689#	30"	2071#	3100' gmwtr (14% gas)

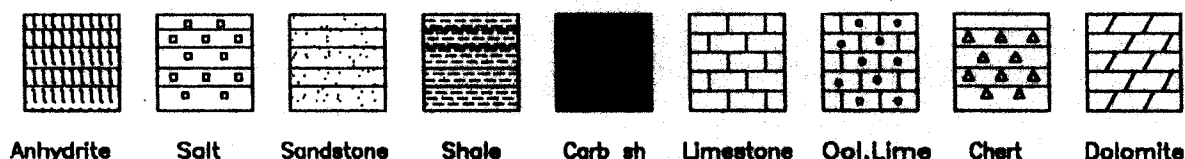
Remarks and Recommendations: Due to the positive results encountered on DST #2 (Original) and the subsequent electric log analysis, it was decided to run 5 1/2" casing to further evaluate the oil & gas potential in the Mississippian Chert section

Respectfully submitted,

PETERRA Energy Services
Jeffrey A. Burk, Consulting Petroleum Geologist

Jeffrey A. Burk

LEGEND



DRILLING TIME IN MINUTES
PER FOOT
Rate of Penetration Decreases

5" 10" 15" 20" 25"

DEPTH

LITHOLOGY

SAMPLE DESCRIPTIONS

OIL SHOWS

REMARKS

LOG 7710

NO RTO 4227'
(2042)

Displaced r
4227'

4250

Vis 37
Wt 8.5"

Ch. mst wh-gry, fresh, sl
blocky, abdt dol. is ns

Dol. tan to buff, f. med
xin, tr inner xin ϕ , abdt ns

Dol. gry, v f xin, b.ky, no
vis ϕ ns

Dol. tan, abdt, s. granitic
few blk (non-carb)

Dol. gry, few s. sniy, ans
xin, Δ y, in part. ns.

Vis 42
Wt 8.6"

a.a.

Dol. tan to buff, f. med
xin, tr inner xin ϕ , abdt ns

a.a.

Dol. tan to buff, f. med xin
tr vgy to inner xin ϕ , tr Δ

Vis 47
Wt 8.7"

Dol. buff to tan, v dns, v
f xin, b.ky, poor to no vis
 ϕ ns

Dol. tan, f. med xin, s. wea
inner gran ϕ , tr ϕ ns

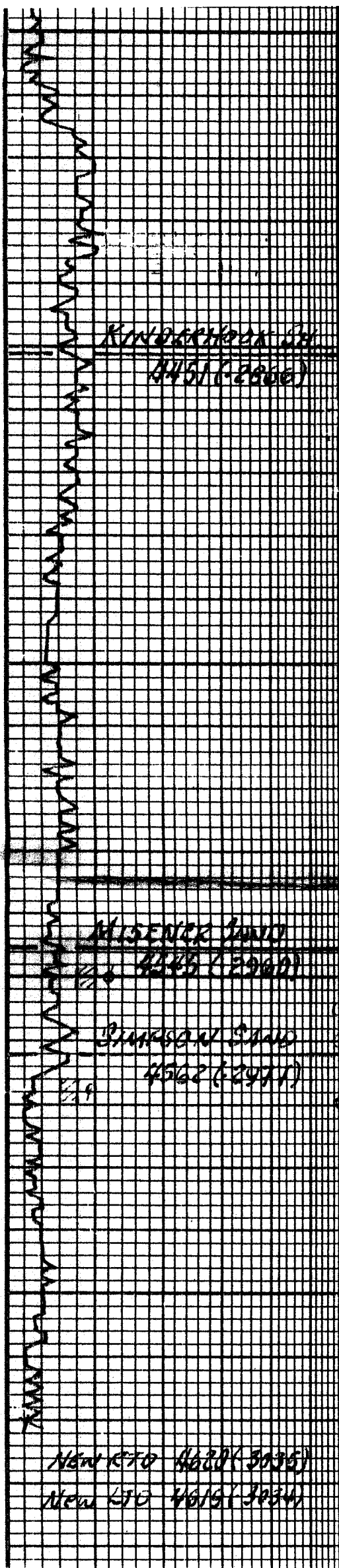
Dol. tan to gry a.a.

a.a.

Dol. gry to tan, f. med xin
tr inner xin ϕ , tr Δ , fresh
blocky

Vis 44
Wt 8.8"

4350



4400

10

20

30

40

4450

50

60

70

80

90

10

20

30

40

4550

50

60

70

80

90

4600

10

20

30

NEW LTD 4620 (3035)

NEW LTD 4619 (3034)

xin aa nsfb

aa

Dol. gry to buff. limy in part, poor to no vis p ns, no flr.

Sh. gry. dns. limy in part few blk (non-carb)

Ls. crm to gry, mst v dns f xin, poor to no vis p

Ls - gry, aa, dns, tr w/si wea edges, tr fr A, nsfb

Sh. mst drk gry to blk, v waxy, dns

Sh. vc, mst gry, few mott, gry-grn, few blk carb, fls in carb.

Sh. v sh gry, waxy to sub waxy, few sl silty

Ss. ss mst gry, s. mica in few, v? grn & silty ns

Ss. sl soy, aa, v silty, f gr sd, s. mica, tr pyrite

Ss. gry, v? grn, silty, poor dev, ns for oil

Sh. mst drk gry, dns some waxy aa

Sh. var shades of gry, some waxy aa

Sh. mst drk gry, some waxy aa

Sd. drish, silty, sl dol, f grain, poor frs, poss if sh oil in 2 pieces

Sd. gryish to tan, mst f-grn dol in mst, poor frs, sl sh fo, tr carb, dull yell flr

Sd. mst clear to tan, fair frs, poss if sh oil in few silty, for after oil, no stain

Sh. gry-grnish, dol & soy in part, no shows, no drk no flr

Dol. mst buff-gry, f xin tr inner xin &, nsfb

Dol. crm to gry, dns, f xin poor to no vis p, nsfb

Dol. gry, dns, f xin, aa, tr edges & in flw, ns

Dol. crm to tan, mst f xin, fair inner xin &, tr soy, ns.

Vis 48
wt 9.0"

Vis 53
wt 9.0"

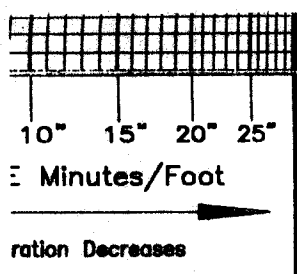
DST #1 (44:
1st wk bld
2nd wk bld
op 30", 45"

REC: 120'
IHP 202
IFP 28"
ISIP 157
FFP 54
FSIP 156
FHP 197
BH

Vis 50
wt 9.0"

DST #2 (45:
1st wk to B
2nd st blow
op 30", 45"

REC: 550'
(4% ci
(50%
3100' g
(73%
(13%
IHP 2122
IFP 91"
ISIP 1687
FFP 924"
FSIP 1685
FHP 2071



DEPTH

LITHOLOGY

SAMPLE DESCRIPTIONS

OIL SHOWS

REMARKS

Chlorides 43,000

FOR Duke Drilling - Rig #8
Claver-Matson #21-1 IP Gas/Oil
V 1585' KB RTD 4620'

LOCATION NW NW NW
SEC 21 TWP 29s RNG 06w
COUNTY Kingman STATE Kansas