# GEOLOGICAL LOGGING

SOUTHWEST LOGGING LTD.

P.O. Box 1151 Phone 628-2125
Ft. Lauder Minnesota Phone 628-2125

COMPANY: NORTHLAND ROYALTY
WELL: LINVILLE NO 1
COUNTY: BUCHANAN STATE: MISSOURI
LOCATION: S/2 NE-LN NE LN SEC 31 SEN 35W

INTERVAL LOGGED: 200'
DATE LOGGED: 11-10-76
ENGINEER: BIERMAN

J 61576
LEASE NO. 1112'
PRO. OIL & GAS COUNTY

UNIT NO.

TD: 1500'
CASING: 8 5/8 @ 200
BIT: 7 7/8 HEMMING CORE BIT
MUD: FRESH WATER
DRILL STEM TEST
CD: CIRCULATED BOTT

Log Started: Dec. Sept. 1967

| | | | |
|---|---|---|---|
| X BASEMENT | SANDS | SHALE | |
| X CHERT | LIMESTONE | SALT | |
| X GRANITE WASH | DOLOMITE | | |

CHROMATOGRAPH SYMBOLS
Methane: M Butane: B
Ethane: E Pentane: P
Propane: P Helium: H

REMARKS

DRILLING RATE MINUTES PER FOOT

LITHOLOGY AND DEPTH

TOTAL GAS FROM WELL

TOTAL GAS FROM CUTTINGS

CHROMATOGRAPHIC ANALYSIS IN UNITS

NO SAMPLE

NO SAMPLE

0 50 100 150 200 250 300 350 400 450 500 550 600 650 700 750 800 850 900 950 1000 1050 1100 1150 1200 1250 1300 1350 1400 1450 1500

200
SH LT GY SFT
LS BUFF WHT F-MX
SH GY SFT
300
LS LT GY BUFF LT TN FX
400
LS GY FX SDY
SM GY VFG CALC SHLY SS
LOSING MUD
SS GY FG TITE SM SHLY
LS LT GY TN FX
TR BLK CARB SH
500
LS WHT MX SM DMS
SH LT GY LT GN SLTY
SM GY SLTY SH
LS LT TN GY F-MX
SH DK GY BLK CARB
600
TR WHT CHT
SM DK GY SLTY SH
SS GY VF-FG SHLY CALC FRIA
SH GY SFT SLTY CALC
700
SS LT GY FG SLALC FRIA
SH LT GY GN SDY MICA PYR
TR LT TN FX LS
SS LT GN VFG STREAKS LT TN FX LS
800
SH GY LT GY SLTY MICA
SS GY LT GY FG
SH LT GY GN SLTY SDY MICA
SM DK GY BLK CARB SH
SS LT GY VF-FG FRIA SHLY
900
SH GY SLTY SDY
TR COAL
SS GY FG FRIA SLI CALC
SH GY SLTY FX TEXT
LS TN BN FX
SM BLK CARB
1000
LS SM FX SM DMS
SS GY FG FRIA
BLK CARB SH W/TR PYR
LS TN BN FX
BLK CARB SH
SH GY SLTY SLI CALC
1100
SH GY DK GY SLTY
SS GY FG FRIA
SH GY SLTY
SS LT GY FG FRIA SM SHLY
SH GY SFT SDY
1200
SS LT GY F-MG W/DEAD STN NO ODOR
SS LT GY WHT FG FRIA SLI TR DULL FLUOR
SM BLK CARB TR COAL
1300
SH DK GY BLK CARB PYR
SS LT GY FG FRIA W DEAD STN
TR BN FX LS
1400
SS AA W/DEAD STN
TR GY DM
LS LT TN BN FX W/DULL YEL FLUOR TR W/ FOND FRSH CUT SLI ODOR CHT WHT LT BLUE
SM MX TN LS W/TR INTER XLNN FORO
CHT WHT OPQ
TR BN FX DOLO
CHT LT BLUE WHT
LS AA
1500
ELECTRIC LOGS