Complete Inventory

API # 15-101-21693

RITCHIE EXPLORATION, INC.
SUITE 1300
125 N. MARKET
WICHITA, KANSAS 67202

CONFIDENTIAL

GEOLOGIST'S REPORT
DRILLING TIME AND SAMPLE LOG

OPERATOR: Ritchie Exploration, Inc.
LEASE: "I" Mandell
FIELD:
LOCATION: approx. SW SE NW
SEC. 18 TWSP. 19S RNG. 27W
COUNTY: Lane STATE: Kansas

ELEVATIONS
KB: 2734
DF:
GL: 2731

MEASUREMENTS ARE ALL FROM KB

CONTRACTOR: Duke Drilling Co. #4
SPUD: Jan. 15, 1993 COMP: Feb. 1, 1993
TOTAL DEPTH: 4500'
SAMPLES SAVED FROM: 3650' TO: 4500'
DRILLING TIME KEPT FROM: 3650' TO: 4500'
SAMPLES EXAMINED FROM: 3650' TO: 4500'
ELEVATIONS VERIFIED BY: Kelly Bushing
MET OF DEPTH MEASUREMENT: Steel Drill Pipe

RELEASED
FEB 1 1993
FROM CONFIDENTIAL

FINAL
RECEIVED
FEB 3 1993
KANSAS GEOLOGICAL SURVEY
WICHITA BRANCH

DST'S & TOP

FORMATION	TOP	DATUM	COMP
Anhydrite	2042	+692	+2
B/Anhy.	2075	+659	+2
Topeka	3911	-1177	+2
Lansing	4006	-1272	+2
B/KC	4350	-1616	+2
Marmaton	4372	-1638	+2
Pawnee	4446	-1712	+2
Fort Scott	4518	-1784	+2
Cherokee	4543	-1809	+2
Mississippian	4626	-1892	+2

RECEIVED BY: Jim Stockton, Geologist
Elevation: KB Evaluation: KB NW SW SE Sec 18 T19S-27W

DST #	DATE	TIME	INTERVAL	RECOVERY	IFP	FFP	ISIP	FSIP
1	1-31-93	Spud 4:00 p.m.	4270'-4300'	Mud	20#	20#	0	0
2	2-1-93	3:45 AM Out of hole 7:00 a.m.	4376-4400'	30' Mud	20#	20#	20#	40#
3	2-1-93	12:00	4400-4500'	5' Mud	20#	20#	20#	20#
4	2-1-93	5:00	4500-4500'	2' Mud	20#	20#	20#	20#
5	2-1-93	7:45	4500-4500'	2' Mud	20#	20#	20#	20#
6	2-1-93	9:45	4500-4500'	2' Mud	20#	20#	20#	20#
7	2-1-93	11:45	4500-4500'	2' Mud	20#	20#	20#	20#

DRILL STEM TESTS by Western Testing Co.

DST #	DATE	TIME	INTERVAL	RECOVERY	IFP	FFP	ISIP	FSIP	FH	BHT	REMARKS
1	1-31-93	4:00 p.m.	4270'-4300'	Mud	20#	20#	0	0	2100#	120° F	2.5" Mud Anchor, 5 min Pad, 30" Initial
2	2-1-93	3:45 AM Out of hole 7:00 a.m.	4376-4400'	30' Mud	20#	20#	20#	40#	2100#	120° F	30 MLC
3	2-1-93	12:00	4400-4500'	5' Mud	20#	20#	20#	20#	2100#	120° F	
4	2-1-93	5:00	4500-4500'	2' Mud	20#	20#	20#	20#	2100#	120° F	
5	2-1-93	7:45	4500-4500'	2' Mud	20#	20#	20#	20#	2100#	120° F	
6	2-1-93	9:45	4500-4500'	2' Mud	20#	20#	20#	20#	2100#	120° F	
7	2-1-93	11:45	4500-4500'	2' Mud	20#	20#	20#	20#	2100#	120° F	

Remarks & Recommendations: The test was terminated on time at 4:00 p.m. Jan. 31, 1993 because of a hole in the drill pipe. Based on the drill stem test and the geologic study, it was further recommended that the hole be cored and checked.

Robert A. Phillips
2/1/93

LEGEND

Lithology: Limestone, Dolomite, Shale, Chert, Sandstone, Oolite, Fossiliferous

Porosity: Vuggy, Intergranular, Fracture, Oil Stain, Fluorescence, Cut Fluorescence

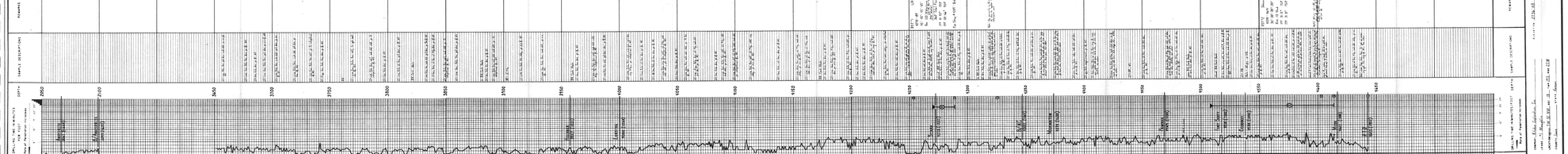
Drilling Time Minutes per Foot: 1 2 3 4 5 6 7 8 9 10

Lithology

Remarks

Sample Description

Depth



Remarks

Sample Description

Depth

Drilling Time Minutes per Foot

Lithology

Drilling Time Minutes per Foot: 1 2 3 4 5 6 7 8 9 10

Prepared by Western Testing Co.

Jim Stockton
Geologist

Ritchie Exploration, Inc.
"I" Mandell
Sec. 18-T19S-R27W
Lane Co., Kansas