

TRILOBITE TESTING COMPANY

P.O. Box 362 • Hays, Kansas 67601

Drill-Stem Test Data

Well Name #1 SMITH ESTATE Test No. 1 Date 11/16/91
Company RITCHIE EXPLORATION INC Zone Tested MISS-OSAGE
Address 125 N MARKET #500 WICHITA KS 67202 Elevation 2314
Co. Rep./Geo. KITT NOAH Cont. WHITE & ELLIS #9 Est. Ft. of Pay _____
Location: Sec. 28 Twp. 22S Rge. 23W Co. HODGEMAN State KS

Interval Tested 4565-4583
Anchor Length 18
Top Packer Depth 4560
Bottom Packer Depth 4565
Total Depth 4583

Drill Pipe Size 4.5 XH
Wt. Pipe I.D. - 2.7 Ft. Run _____
Drill Collar - 2.25 Ft. Run _____

Mud Wt. 9.3 lb / gal. Viscosity 44 Filtrate 12

Tool Open @ 9:31 AM Initial Blow 1/4" BLOW BUILDING TO 1" THEN DECREASING
TO 3/4"

Final Blow NO BLOW

Recovery — Total Feet 25 Flush Tool? NO

Rec. 2 Feet of CLEAN OIL

Rec. 23 Feet of SLTLY OIL CUT MUD-5%OIL/95%MUD

Rec. _____ Feet of _____

Rec. _____ Feet of _____

Rec. _____ Feet of _____

BHT 117 °F Gravity _____ °API @ _____ °F Corrected Gravity _____ °API

RW _____ @ _____ °F Chlorides _____ ppm Recovery Chlorides _____ ppm System

(A) Initial Hydrostatic Mud 2214.9 PSI AK1 Recorder No. 13277 Range 3975

(B) First Initial Flow Pressure 52.3 PSI @ (depth) 4567 w/Clock No. 17640

(C) First Final Flow Pressure 52.3 PSI AK1 Recorder No. 24174 Range 3350

(D) Initial Shut-in Pressure 251.9 PSI @ (depth) 4582 w/Clock No. 30401

(E) Second Initial Flow Pressure 52.3 PSI AK1 Recorder No. _____ Range _____

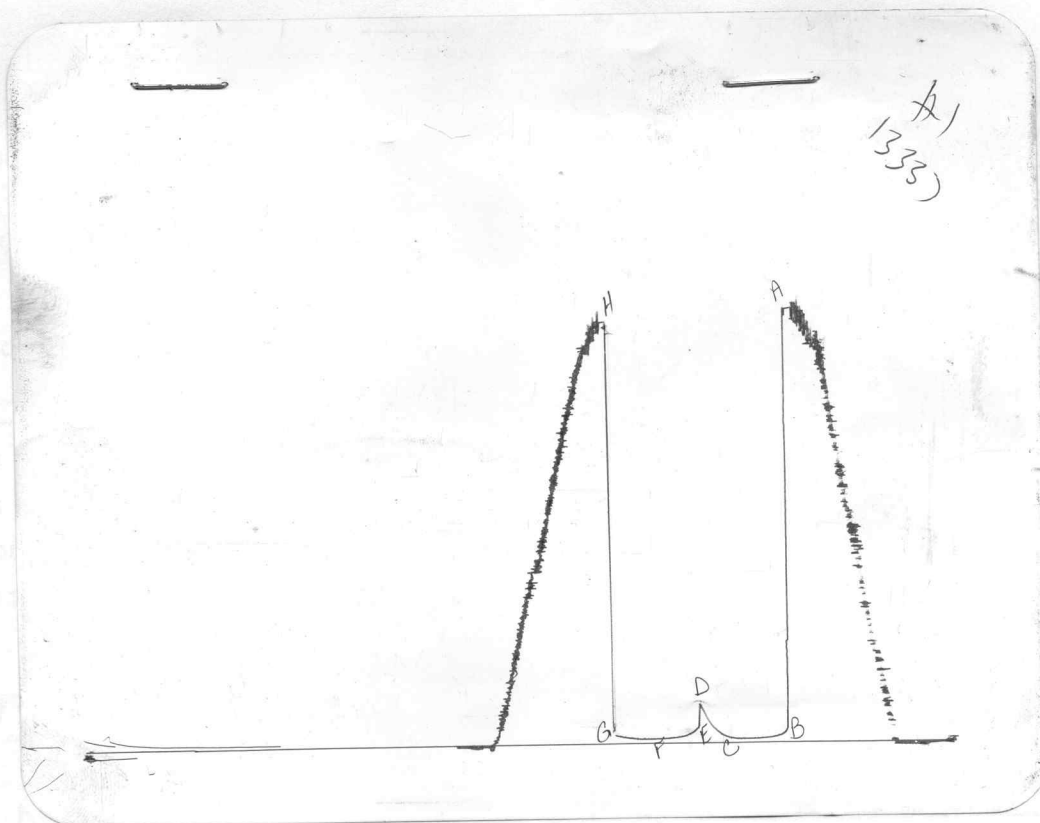
(F) Second Final Flow Pressure 52.3 PSI @ (depth) _____ w/Clock No. _____

(G) Final Shut-in Pressure 64.8 PSI Initial Opening 30 Final Flow 30

(H) Final Hydrostatic Mud 2170.8 PSI Initial Shut-in 30 Final Shut-in 30

Our Representative PAUL SIMPSON

TOTAL PRICE \$ 550



POINT This is an actual photograph of recorder chart
PRESSURE

FIELD
READING

OFFICE
READING

(A) INITIAL HYDROSTATIC MUD	2206	2214.9
(B) FIRST INITIAL FLOW PRESSURE	49	52.3
(C) FIRST FINAL FLOW PRESSURE	49	52.3
(D) INITIAL CLOSED-IN PRESSURE	248	251.9
(E) SECOND INITIAL FLOW PRESSURE	49	52.3
(F) SECOND FINAL FLOW PRESSURE	49	52.3
(G) FINAL CLOSED-IN PRESSURE	58	64.8
(H) FINAL HYDROSTATIC MUD	2167	2170.8

TRILOBITE TESTING COMPANY TRILOBITE TESTING COMPANY

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Test Ticket

No 4664

Well Name & No. <u>#1 Smith Estate</u>	Test No. <u>1</u>	Date <u>11-16-91</u>
Company <u>Ritchie Exploration Inc</u>	Zone Tested <u>Miss - Osage</u>	
Address <u>125 N Market #1000 Wichita KS 67202</u>	Elevation <u>2314</u>	
Co. Rep./Geo. <u>Kitt Noah</u>	Cont. <u>Whit & Ellis #9</u>	Est. Ft. of Pay _____
Location: Sec. <u>28</u> Twp. <u>22S</u> Rge. <u>23W</u>	Co. <u>Hodgeman</u>	State <u>KS</u>
No. of Copies _____	Distribution Sheet _____	Yes _____ No _____ Turnkey _____ Yes _____ No _____ Evaluation _____

Interval Tested <u>4565-4583</u>	Drill Pipe Size <u>4 1/2 XH</u>
Anchor Length <u>18</u>	Top Choke — 1" Bottom Choke — 3/4"
Top Packer Depth <u>4560</u>	Hole Size — 7 7/8" Rubber Size — 6 3/4"
Bottom Packer Depth <u>4565</u>	Wt. Pipe I.D. — 2.7 Ft. Run _____
Total Depth <u>4583</u>	Drill Collar — 2.25 Ft. Run _____
Mud Wt. <u>9.3</u> lb/gal.	Viscosity <u>44</u> Filtrate <u>12.0</u>
Tool Open @ <u>9:31 AM</u>	Initial Blow <u>1/4" blow building to 1" then decreasing to 3/4"</u>
Final Blow <u>no blow</u>	

Recovery — Total Feet <u>25</u>	Feet of Gas in Pipe _____	Flush Tool? _____
Rec. <u>2</u> Feet Of <u>cl oil</u>	%gas _____ %oil _____ %water _____ %mud _____	
Rec. <u>23</u> Feet Of <u>SO CM</u>	%gas <u>5</u> %oil _____ %water <u>95</u> %mud _____	
Rec. _____ Feet Of _____	%gas _____ %oil _____ %water _____ %mud _____	
Rec. _____ Feet Of _____	%gas _____ %oil _____ %water _____ %mud _____	
Rec. _____ Feet Of _____	%gas _____ %oil _____ %water _____ %mud _____	

BHT 117 °F Gravity _____ °API @ _____ °F Corrected Gravity _____ °API

RW _____ @ _____ °F Chlorides _____ ppm Recovery Chlorides _____ ppm System

(A) Initial Hydrostatic Mud <u>2206</u>	PSI AK1 Recorder No. <u>13277</u>	Range <u>3975</u>
(B) First Initial Flow Pressure <u>49</u>	PSI @ (depth) <u>4562</u>	w/Clock No. <u>17640</u>
(C) First Final Flow Pressure <u>49</u>	PSI AK1 Recorder No. <u>24174</u>	Range <u>3350</u>
(D) Initial Shut-In Pressure <u>248</u>	PSI @ (depth) <u>4582</u>	w/Clock No. <u>30401</u>
(E) Second Initial Flow Pressure <u>49</u>	PSI AK1 Recorder No. _____	Range _____
(F) Second Final Flow Pressure <u>49</u>	PSI @ (depth) _____	w/Clock No. _____
(G) Final Shut-In Pressure <u>58</u>	PSI Initial Opening <u>30</u>	Test <u>550.00</u>
(H) Final Hydrostatic Mud <u>2167</u>	PSI Initial Shut-In <u>30</u>	Jars _____

TRILOBITE TESTING COMPANY SHALL NOT BE LIABLE FOR DAMAGE OF ANY KIND OF THE PROPERTY OR PERSONNEL OF THE ONE FOR WHOM A TEST IS MADE, OR FOR ANY LOSS SUFFERED OR SUBSTAINED, DIRECTLY OR INDIRECTLY, THROUGH THE USE OF ITS EQUIPMENT, OR ITS STATEMENTS OR OPINION CONCERNING THE RESULTS OF ANY TEST. TOOLS LOST OR DAMAGED IN THE HOLE SHALL BE PAID FOR AT COST BY THE PARTY FOR WHOM THE TEST IS MADE.

Final Flow <u>30</u>	Safety Joint _____
Final Shut-In <u>30</u>	Straddle _____
	Circ. Sub _____
	Sampler _____
	Extra Packer _____
	Other _____

Approved By Kitt Noah
Our Representative Paul Simpson

TRILOBITE TESTING COMPANY

P.O. Box 362 • Hays, Kansas 67601

Drill-Stem Test Data

Well Name #1 SMITH ESTATE Test No. 2 Date 11/16/91
Company RITCHIE EXPLORATION INC Zone Tested MISS-OSAGE
Address 125 N MARKET #500 WICHITA KS 67202 Elevation 2314
Co. Rep./Geo. KITT NOAH Cont. WHITE & ELLIS #9 Est. Ft. of Pay _____
Location: Sec. 28 Twp. 22S Rge. 23W Co. HODGEMAN State KS

Interval Tested 4577-4587
Anchor Length 10
Top Packer Depth 4572
Bottom Packer Depth 4577
Total Depth 4587

Drill Pipe Size 4.5 XH
Wt. Pipe I.D. - 2.7 Ft. Run _____
Drill Collar - 2.25 Ft. Run _____

Mud Wt. 9.3 lb / gal. Viscosity 44 Filtrate 12

Tool Open @ 11:33 PM Initial Blow FAIR 1/2" BLOW STEADY THROUGHOUT

Final Blow WEAK SURFACE RETURN DIED IN 14 MINUTES

Recovery — Total Feet 12 Flush Tool? NO

Rec. 12 Feet of DRILLING MUD W/ SCUM OF OIL IN TOOL

Rec. _____ Feet of _____

Rec. _____ Feet of _____

Rec. _____ Feet of _____

Rec. _____ Feet of _____

BHT 115 °F Gravity _____ °API @ _____ °F Corrected Gravity _____ °API

RW _____ @ _____ °F Chlorides _____ ppm Recovery Chlorides 3000 ppm System

(A) Initial Hydrostatic Mud 2250.6 PSI AK1 Recorder No. 13615 Range 4575

(B) First Initial Flow Pressure 30.1 PSI @ (depth) 4579 w/Clock No. 19960

(C) First Final Flow Pressure 30.1 PSI AK1 Recorder No. 13309 Range 4700

(D) Initial Shut-in Pressure 970.4 PSI @ (depth) 4582 w/Clock No. 27566

(E) Second Initial Flow Pressure 30.1 PSI AK1 Recorder No. _____ Range _____

(F) Second Final Flow Pressure 30.1 PSI @ (depth) _____ w/Clock No. _____

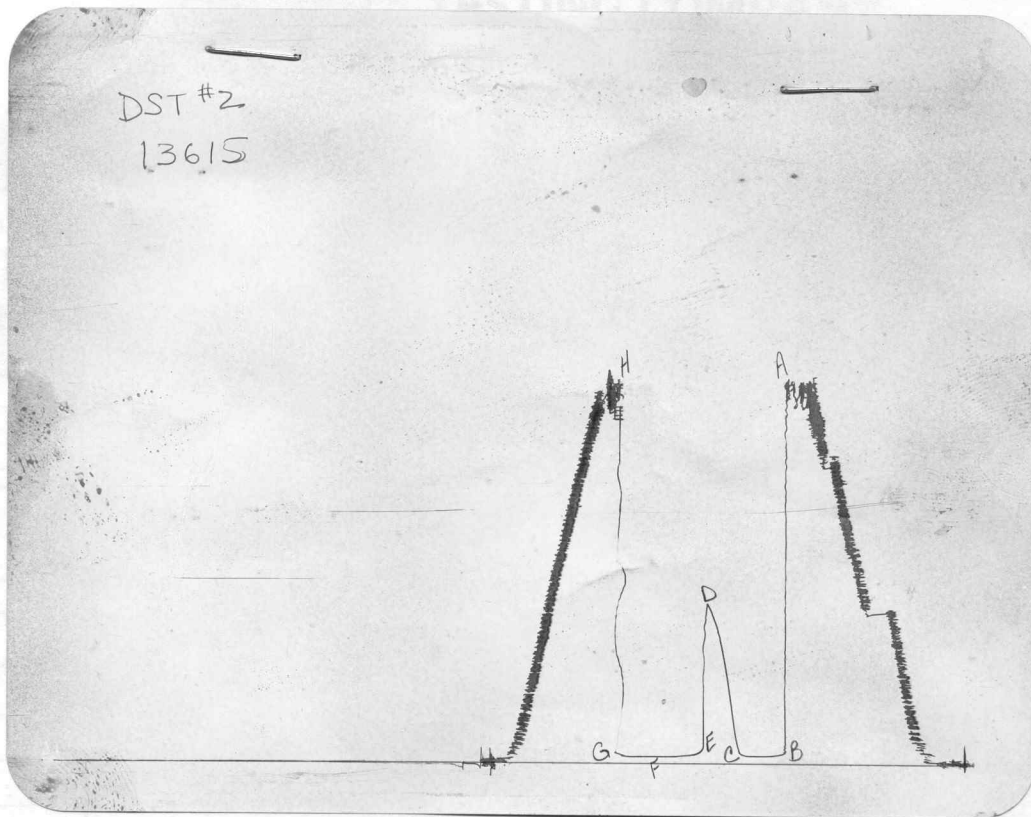
(G) Final Shut-in Pressure 30.1 PSI Initial Opening 30 Final Flow 30

(H) Final Hydrostatic Mud 2199.7 PSI Initial Shut-in 30 Final Shut-in 30

Our Representative ROD STEINBRINK

TOTAL PRICE \$ 550

DST #2
13615



POINT This is an actual photograph of recorder chart
PRESSURE

	FIELD READING	OFFICE READING
(A) INITIAL HYDROSTATIC MUD	2241	2250.6
(B) FIRST INITIAL FLOW PRESSURE	23	30.1
(C) FIRST FINAL FLOW PRESSURE	23	30.1
(D) INITIAL CLOSED-IN PRESSURE	961	970.4
(E) SECOND INITIAL FLOW PRESSURE	23	30.1
(F) SECOND FINAL FLOW PRESSURE	23	30.1
(G) FINAL CLOSED-IN PRESSURE	23	30.1
(H) FINAL HYDROSTATIC MUD	2194	2199.7

THIS TEST IS TO BE CONSIDERED A PRELIMINARY TEST AND NOT A FINAL TEST. ANY AND ALL ERRORS OR DEFICIENCIES IN THE TEST OR IN THE RECORDING OR IN THE DATA OBTAINED THEREFROM SHALL BE THE RESPONSIBILITY OF THE TESTER AND NOT OF THE COMPANY OR THE FIELD OFFICE. THE COMPANY OR THE FIELD OFFICE SHALL NOT BE RESPONSIBLE FOR ANY AND ALL ERRORS OR DEFICIENCIES IN THE TEST OR IN THE RECORDING OR IN THE DATA OBTAINED THEREFROM.

Safety/JOH

Schedule

Site Job

SOFTW

EXTRA FACTOR

Other

TOTAL DATES

TRILOBITE TESTING COMPANY TRILOBITE TESTING COMPANY

P.O. Box 362 • Hays, Kansas 67601

Test Ticket

No. 4017

267 - 3026

Well Name & No. Smith Estate #1 Test No. 2 Date 11-16-91
 Company Ritchie Exploration, Inc. Zone Tested Miss. Osage
 Address 125 N. Market Ste. 1000 Wichita, KS. 67202 Elevation 2314 (KB)
 Co. Rep./Geo. Kitt Noah cont. White & Ellis #9 Est. Ft. of Pay _____
 Location: Sec. 28 Twp. 22 S Rge. 23 W Co. Hodgeman State KS.
 No. of Copies _____ Distribution Sheet _____ Yes _____ No _____ Turnkey _____ Yes _____ No _____ Evaluation _____

Interval Tested 4577 - 4587 Drill Pipe Size 4 1/2" XH
 Anchor Length 10' Top Choke — 1" Bottom Choke — 3/4"
 Top Packer Depth 4577 - 4572 Hole Size — 77/8" Rubber Size — 63/4"
 Bottom Packer Depth 4577 4587 Wt. Pipe I.D. — 2.7 Ft. Run _____
 Total Depth 4587 Drill Collar — 2.25 Ft. Run _____
 Mud Wt. 9.3 lb/gal. Viscosity 44 Filtrate 12.0
 Tool Open @ 11:33 pm Initial Blow Fair 1/2" blow steady throughout.

Final Blow Weak surface return died in 14 mins.

Recovery — Total Feet 12' Feet of Gas in Pipe _____ Flush Tool? No

Rec.	Feet Of	%gas	%oil	%water	%mud
<u>12'</u>	<u>Drilg. Mud</u>				
	<u>w/ scum of oil in tool</u>				

BHT 115° °F Gravity _____ °API @ _____ °F Corrected Gravity _____ °API

RW _____ @ _____ °F Chlorides _____ ppm Recovery Chlorides 3,000 ppm System

(A) Initial Hydrostatic Mud 2241 PSI White AK1 Recorder No. 13615 Range 4575
 (B) First Initial Flow Pressure 23 PSI @ (depth) 4579 w/Clock No. 19960
 (C) First Final Flow Pressure 23 PSI Black AK1 Recorder No. 13309 Range 4700
 (D) Initial Shut-In Pressure 961 PSI @ (depth) 4582 w/Clock No. 27566
 (E) Second Initial Flow Pressure 23 PSI AK1 Recorder No. _____ Range _____
 (F) Second Final Flow Pressure 23 PSI @ (depth) _____ w/Clock No. _____
 (G) Final Shut-In Pressure 23 PSI Initial Opening 30 Test _____
 (H) Final Hydrostatic Mud 2194 PSI Initial Shut-In 30 Jars _____

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Approved By Kitt Noah
 Our Representative Rod Steinbrink

Final Flow 30 Safety Joint _____
 Final Shut-In 30 Straddle _____
 Circ. Sub X N/C
 Sampler _____
 Extra Packer _____
 Other _____
 TOTAL PRICE \$ _____

TRILOBITE TESTING COMPANY

P.O. Box 362 • Hays, Kansas 67601

Drill-Stem Test Data

Well Name #1 SMITH ESTATE Test No. 3 Date 11/17/91
Company RITCHIE EXPLORATION INC Zone Tested MISS-OSAGE
Address 125 N MARKET #500 WICHITA KS 67202 Elevation 2314
Co. Rep./Geo. KITT NOAH Cont. WHITE & ELLIS #9 Est. Ft. of Pay 5
Location: Sec. 28 Twp. 22S Rge. 23W Co. HODGEMAN State KS

Interval Tested 4585-4595
Anchor Length 10
Top Packer Depth 4580
Bottom Packer Depth 4585
Total Depth 4595

Drill Pipe Size 4.5 XH
Wt. Pipe I.D. - 2.7 Ft. Run
Drill Collar - 2.25 Ft. Run

Mud Wt. 9.3 lb / gal. Viscosity 46 Filtrate 12.8

Tool Open @ 12:47 AM Initial Blow TOOL SLID 1" TO BOTTOM PICKED UP 3" BLOW
DECREASED AND DIED IN 25 MINUTES

Final Blow NO RETURN BLOW-FLUSHED TOOL-SURFACE RETURN SLOWLY
BUILT TO WITHIN 1" FROM BOTTOM/FSI: BLED OFF BLOW-NO RETURN

Recovery — Total Feet 240 Flush Tool? YES

Rec. 5 Feet of CLEAN OIL

Rec. 25 Feet of OIL CUT WTRY MUD-15%OIL/25%WTR/60%MUD

Rec. 90 Feet of WATERY MUD-30%WATER/70%MUD

Rec. 120 Feet of SULFUR WATER-85%WTR/15%MUD

Rec. 120 Feet of
BHT 120 °F Gravity 33 °API @ 64 °F Corrected Gravity 32.4 °API

RW 0.47 @ 41 °F Chlorides 26000 ppm Recovery Chlorides 4000 ppm System

(A) Initial Hydrostatic Mud 2260.7 PSI AK1 Recorder No. 13615 Range 4575

(B) First Initial Flow Pressure PSI @ (depth) 4587 w/Clock No. 19960

(C) First Final Flow Pressure PSI AK1 Recorder No. 13309 Range 4700

(D) Initial Shut-in Pressure PSI @ (depth) 4590 w/Clock No. 27566

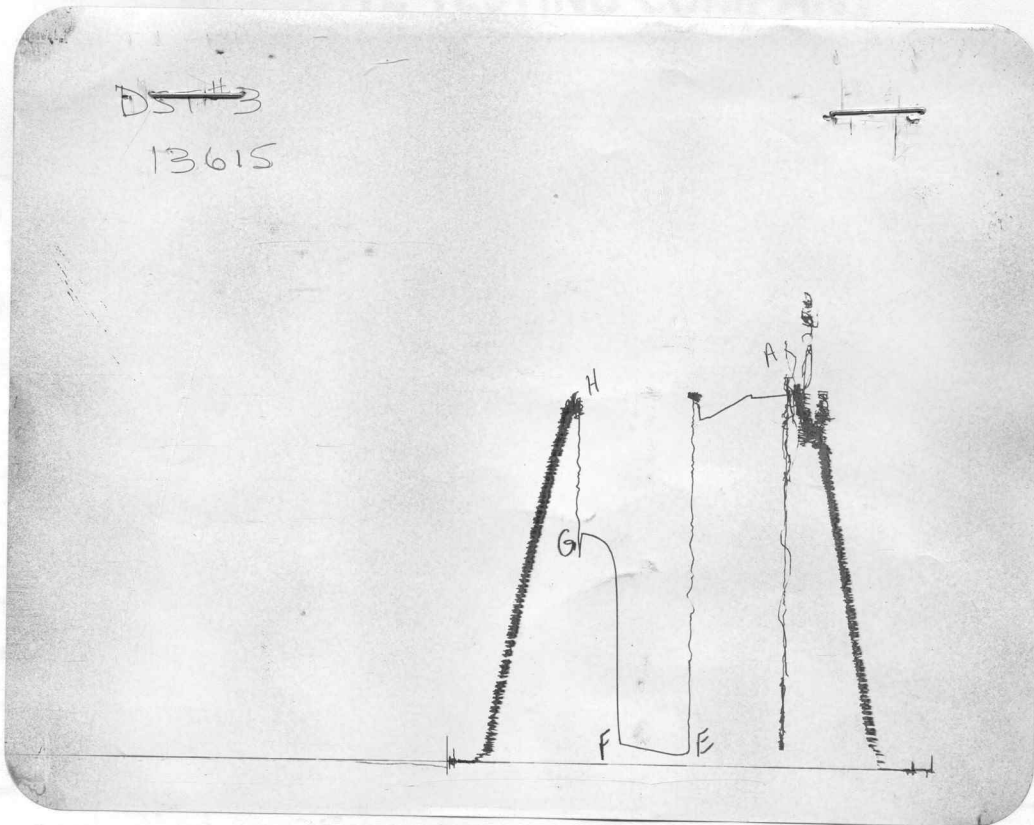
(E) Second Initial Flow Pressure 66.3 PSI AK1 Recorder No. Range

(F) Second Final Flow Pressure 114.5 PSI @ (depth) w/Clock No.

(G) Final Shut-in Pressure 1388.7 PSI Initial Opening 30 Final Flow 60

(H) Final Hydrostatic Mud 2210.9 PSI Initial Shut-in 30 Final Shut-in 30

Our Representative ROD STEINBRINK TOTAL PRICE \$ 550



POINT This is an actual photograph of recorder chart PRESSURE

	FIELD READING	OFFICE READING
(A) INITIAL HYDROSTATIC MUD	2253	2260.7
(B) FIRST INITIAL FLOW PRESSURE		
(C) FIRST FINAL FLOW PRESSURE		
(D) INITIAL CLOSED-IN PRESSURE		
(E) SECOND INITIAL FLOW PRESSURE	58	66.3
(F) SECOND FINAL FLOW PRESSURE	106	114.5
(G) FINAL CLOSED-IN PRESSURE	1383	1388.7
(H) FINAL HYDROSTATIC MUD	2206	2210.9

DATE TESTING COMPANY SHALL NOT BE LIABLE FOR DAMAGE TO OR LOSS OF THE TEST OR EQUIPMENT OF THE ONE FOR WHOM A TEST IS MADE, OR FOR ANY LOSS INCURRED OR DAMAGE DONE, DIRECTLY OR INDIRECTLY, BY THE USE OF ITS EQUIPMENT, OR THE RESULTS OR OTHERWISE, IN THE FIELD SHALL BE PAID FOR AT POST BY THE PARTY FOR WHOM THE TEST IS MADE.

SAFETY JUMP
SHADE
CIR. 1/2
LAMP
BATTERY
OTHER

TOTAL PRICE

TRILOBITE TESTING COMPANY

P.O. Box 362 • Hays, Kansas 67601

Test Ticket

No. 4018

Well Name & No. Smith Estate #1 Test No. 3 Date 11-17-91
 Company Ritchie Exploration, Inc. Zone Tested Miss. Osage
 Address 125 N. Market Ste. 1000 Wichita, KS. 67202 Elevation 2314 (KB)
 Rep./Geo. Kitt Noah Cont. White & Ellis #9 Est. Ft. of Pay 5'
 Location: Sec. 28 Twp. 22 S Rge. 23 W Co. Hodgeman State KS.
 No. of Copies _____ Distribution Sheet _____ Yes _____ No _____ Turnkey _____ Yes _____ No _____ Evaluation _____

Interval Tested 4585 - 4595 Drill Pipe Size 4 1/2" XH
 Anchor Length 10' Top Choke — 1" _____ Bottom Choke — 3/4" _____
 Packer Depth 4580 Hole Size — 7 7/8" _____ Rubber Size — 6 3/4" _____
 Bottom Packer Depth 4585 Wt. Pipe I.D. — 2.7 Ft. Run _____
 Total Depth 4595 Drill Collar — 2.25 Ft. Run _____
 Mud Wt. 9.3 lb/gal. Viscosity 46 Filtrate 12.8

Blow Open @ 12:47 am Initial Blow Tool slid 1' to bottom picked up 3" blow
decreased and died in 25 mins.

Final Blow No return blow - flushed tool - surface return slowly built
up within 1" from bottom FSI: Bled off blow - No return.

Recovery — Total Feet 240' Feet of Gas in Pipe _____ Flush Tool? YES

	Feet Of		%gas	%oil	%water	%mud
	<u>5'</u>	<u>CO</u>				
	<u>25'</u>	<u>OCWM</u>	%gas <u>15</u>	%oil <u>25</u>	%water <u>60</u>	%mud
	<u>90'</u>	<u>WM</u>	%gas <u>—</u>	%oil <u>30</u>	%water <u>70</u>	%mud
	<u>120'</u>	<u>Sulfer Water</u>	%gas <u>—</u>	%oil <u>85</u>	%water <u>15</u>	%mud
	Feet Of		%gas	%oil	%water	%mud

Temp 120° °F Gravity 33 °API @ 64° °F Corrected Gravity 32.4 °API
.47 @ 41 °F Chlorides 26,000 ppm Recovery Chlorides 4,000 ppm System

Initial Hydrostatic Mud 2253 PSI AK1 Recorder No. 13615 Range 4575

First Initial Flow Pressure _____ PSI @ (depth) 4587 w/Clock No. 19960

First Final Flow Pressure _____ PSI AK1 Recorder No. 13309 Range 4700

Initial Shut-In Pressure _____ PSI @ (depth) 4590 w/Clock No. 27566

Second Initial Flow Pressure 58 PSI AK1 Recorder No. _____ Range _____

Second Final Flow Pressure 106 PSI @ (depth) _____ w/Clock No. _____

Final Shut-In Pressure 1383 PSI Initial Opening 30 Test _____

Final Hydrostatic Mud 2206 PSI Initial Shut-In 30 Jars _____

Final Flow 60 Safety Joint _____

Final Shut-In 30 Straddle _____

Circ. Sub X

Sampler _____

Extra Packer _____

Other _____

TOTAL PRICE \$ _____

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Approved By Kitt Noah

Representative Rod Steinbrink