TRILOBITE TESTING, L.L.C.

P.O. Box 362 • Hays, Kansas 67601

Drill-Stem Test Data

Well Name #1 ETHEL M. O'LEARY Test No. 1 Date 9/13/93

Company ARCO OIL & GAS CO/SIERRA ENGINEERING Zone ST LOUIS

Address BOX 1610 MIDLAND TX 79702 Elevation 3153

Co. Rep./Geo. LARRY BUSSEY Cont. BEREDCO RIG #5 Est. Ft. of Pay 25

Location: Sec. 25 Twp. 29S Rge. 39W Co. STANTON State KS

Interval Tested 5664-5703 Drill Pipe Size 4.5" XH

Anchor Length 39 Wt. Pipe I.D. - 2.7 Ft. Run

Top Packer Depth 5659 Drill Collar – 2.25 Ft. Run 733

Bottom Packer Depth 5664 Mud Wt. 9 lb/Gal.

Total Depth 5703 Viscosity 55 Filtrate 7.2

Tool Open @ 7:27 AM Initial Blow FAIR TO STRONG BLOW - OFF BOTTOM IN 1.5 MINUTES

ISI: BLED OFF BLOW - NO RETURN

Final Blow FAIR SURFACE BLOW BUILT TO 8"

FSI: BLED OFF BLOW - NO RETURN

Recovery - Total Feet 1340 Flush Tool? NO

Rec. 170 Feet of MUDDY WTR WITH SHOW OF OIL-30% WTR/ 70% MUD

Rec. 90 Feet of SLTLY MUDDY WTR WITH SHOW OF OIL-70% WTR/ 30% MUD

Rec. 1080 Feet of SALT WATER

Rec. Feet of

Rec. Feet of

BHT 142 °F Gravity °API @ °F Corrected Gravity °API

RW 0.7 @ 50 °F Chlorides 13000 ppm Recovery Chlorides 800 ppm System

(A) Initial Hydrostatic Mud 2944.3 PSI AK1 Recorder No. 13339 Range 4025

(B) First Initial Flow Pressure 402.3 PSI @ (depth) 5667 w / Clock No. 26199

(C) First Final Flow Pressure 567.8 PSI AK1 Recorder No. 13309 Range 4700

(D) Initial Shut-in Pressure 633.1 PSI @ (depth) 5700 w / Clock No. 26191

(E) Second Initial Flow Pressure 610.2 PSI AK1 Recorder No. Range

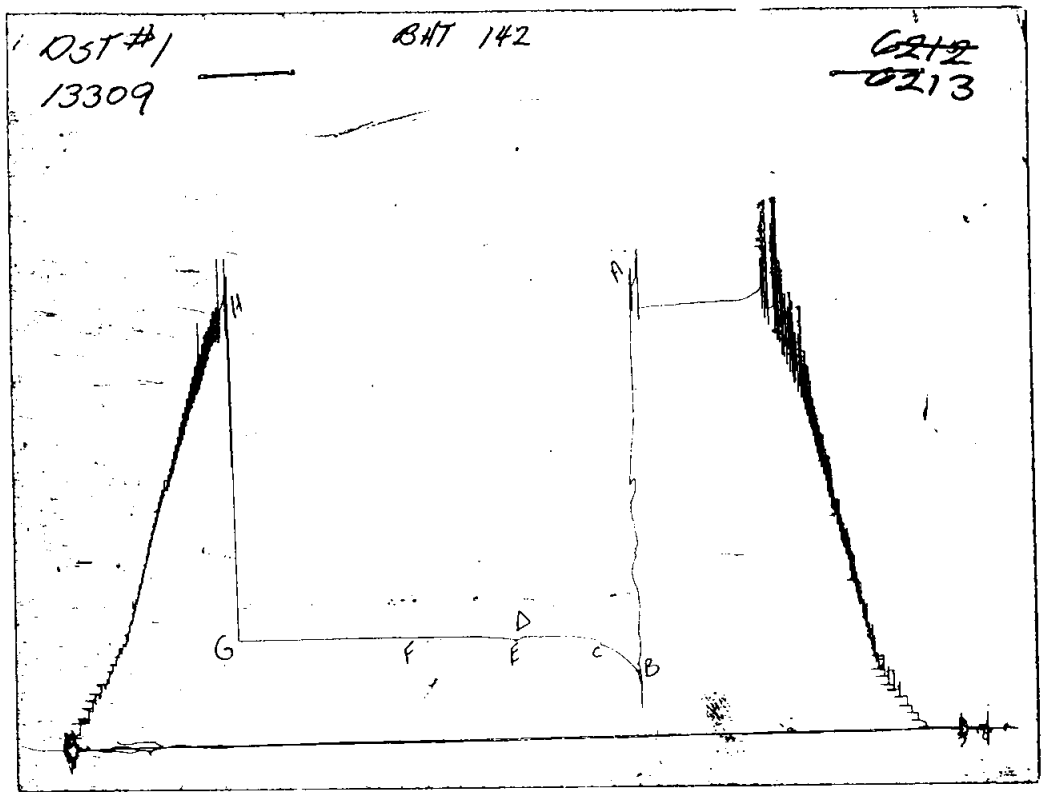
(F) Second Final Flow Pressure 630.5 PSI @ (depth) w / Clock No.

(G) Final Shut-in Pressure 654.9 PSI Initial Opening 30 Final Flow 90

(H) Final Hydrostatic Mud 2933.1 PSI Initial Shut-in 60 Final Shut-in 120

Our Representative PETE WAGGONER

CHART PAGE



This is an actual photograph of recorder chart

	FIELD READING	OFFICE READING
(A) INITIAL HYDROSTATIC MUD	2946	2944.3
(B) FIRST INITIAL FLOW PRESSURE	400	402.3
(C) FIRST FINAL FLOW PRESSURE	566	567.8
(D) INITIAL CLOSED-IN PRESSURE	638	633.1
(E) SECOND INITIAL FLOW PRESSURE	602	610.2
(F) SECOND FINAL FLOW PRESSURE	626	630.5
(G) FINAL CLOSED-IN PRESSURE	650	654.9
(H) FINAL HYDROSTATIC MUD	2957	2933.1

FLUID SAMPLER DATA

Ticket No.: 6213 Date: 9/13/93

Company: ARCO OIL & GAS CO/SIERRA ENGINEERING

Lease: #1 ETHEL M. O'LEARY Test No.: 1

County: STANTON Sec.: 25 Twp.: 29S Rng.: 39W

SAMPLER RECOVERY

Gas	
Oil	500
Mud	
Water	3500
Other	
Pressure	95
TOTAL	4000

SAMPLER ANALYSIS

Resistivity 0.7 ohms@ 50 F

Chlorides 13000 ppm.

Gravity corrected @60F

PIT MUD ANALYSIS

Chlorides 800

Resistivity 0.7 ohms@ 50 F

Viscosity 55

Mud Wt. 9

Filtrate 7.2

Other

PIPE RECOVERY

TOP

Resistivity 0.75 ohms@ 50 F

Chlorides 12000 ppm

MIDDLE

Resistivity 0.7 ohms@ 50 F

Chlorides 13000 ppm

BOTTOM

Resistivity 0.7 ohms@ 50 F

Chlorides 13000 ppm

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FLUID SAMPLER DATA

Ticket No. C213 Date 9-13-93

Company Name Sierra Engineering

Lease Ethel M. O'Leary #1 Test No. 1

County Stanton Ks. Sec. 25 Twp. 29S Rng. 39

SAMPLER RECOVERY

Gas — ML

Oil 500 ML

Mud — ML

Water 3500 ML

Other ML

Pressure 95 PSI

Total 4000 ML

PIT MUD ANALYSIS

Chlorides 800 ppm.

Resistivity 9 ohms @ 50° F

Viscosity 35

Mud Weight 9.0

Filtrate 9.2

Other

SAMPLER ANALYSIS

Resistivity .70 ohms @ 50 F

Chlorides 13000 ppm.

Gravity corrected @ 60 F

PIPE RECOVERY

TOP

Resistivity .75 ohms @ 50 F

Chlorides 12000 ppm.

MIDDLE

Resistivity .70 ohms @ 50 F

Chlorides 13000 ppm.

BOTTOM

Resistivity .70 ohms @ 50 F

Chlorides 13000 ppm.

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Test Ticket

№ 6213

Ethel M. O'Leary #1

Well Name & No. ~~Sierra Engineering~~ Test No. 1 Date 9-13-93

Company Sierra Engineering Zone Tested St. Louis

Address P.O Box 30203 Midland Texas 79710 Elevation 3153 KB

Co. Rep./Geo. Larry Bussey Cont. Beredco Inc. Rig #5 Est. Ft. of Pay 25

Location: Sec. 25 Twp. 29S Rge. 39 Co. Stanton State Ks

No. of Copies 6 Distribution Sheet X Yes ____ No Turnkey ____ Yes X No 4½ Evaluation

Interval Tested 5664-5703 Drill Pipe Size 4½" XH

Anchor Length 39 Top Choke — 1" ____ Bottom Choke — ¾" ____

Top Packer Depth 5659 Hole Size — 7⅞" ____ Rubber Size — 6¾" ____

Bottom Packer Depth 5664 Wt. Pipe I.D. — 2.7 Ft. Run —

Total Depth 5703 Drill Collar — 2.25 Ft. Run 733

Mud Wt. 9.0 lb/gal. Viscosity 55 Filtrate 7.2

Tool Open @ 7:27 pm Initial Blow Fair to strong blow - off bottom in 1½ min
15I- bled off blow - no return

Final Blow Fair surface blow built to 8"
FSI- bled off blow - no return

Recovery — Total Feet 1340' Feet of Gas in Pipe ____ Flush Tool? ____

Rec. 170' Feet Of muddy water w/blow of oil %gas tr %oil 30 %water 70 %mud

Rec. 90' Feet Of slightly muddy water w/show of oil %gas tr %oil 70 %water 30 %mud

Rec. 1080' Feet Of SALT WATER %gas %oil 100 %water %mud

Rec. ____ Feet Of ____ %gas %oil %water %mud

Rec. ____ Feet Of ____ %gas %oil %water %mud

BHT 142 °F Gravity ____ °API @ ____ °F Corrected Gravity ____ °API

RW .70 @ .50° °F Chlorides 13000 ppm Recovery Chlorides 800 ppm System

(A) Initial Hydrostatic Mud	2946 PSI	AK1 Recorder No.	13339	Range	4025
(B) First Initial Flow Pressure	400 PSI	@ (depth)	5667	w/Clock No.	26199
(C) First Final Flow Pressure	566 PSI	AK1 Recorder No.	13309	Range	4700
(D) Initial Shut-In Pressure	638 PSI	@ (depth)	5700	w/Clock No.	26191
(E) Second Initial Flow Pressure	602 PSI	AK1 Recorder No.	____	Range	____
(F) Second Final Flow Pressure	626 PSI	@ (depth)	____	w/Clock No.	____
(G) Final Shut-In Pressure	650 PSI	Initial Opening	30	Test	X $700.00
(H) Final Hydrostatic Mud	2957 PSI	Initial Shut-In	60	Jars	X $200.00
		Final Flow	90	Safety Joint	X $50.00
		Final Shut-In	120	Straddle	____
				Circ. Sub	X N/C
				Sampler	X $200.00
				Extra Packer	—
				Other	—
				TOTAL PRICE $	$1150.00

TRILOBITE TESTING L.L.C. 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 SUSTAINED, 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.

Approved By [signature]

Our Representative [signature]

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