

TRILOBITE TESTING, L.L.C.

P.O. Box 362 • Hays, Kansas 67601

Drill-Stem Test Data

Well Name GARDEN CITY NE #1 Test No. 1 Date 5/26/92
Company BEREXCO INC Zone ST LOUIS "B"
Address 970 4th FINANCIAL CNTR WICHITA KS 67202 Elevation 2918
Co. Rep./Geo. CHARLIE SPRADLIN Cont. BEREDCO DRLG #1 Est. Ft. of Pay 5
Location: Sec. 20 Twp. 22S Rge. 33W Co. FINNEY State KS

Interval Tested 4772-4787 Drill Pipe Size 4.5 XH
Anchor Length 15 Wt. Pipe I.D. - 2.7 Ft. Run _____
Top Packer Depth 4762 Drill Collar - 2.25 Ft. Run 610
Bottom Packer Depth 4772 Mud Wt. 9.1 lb/Gal.
Total Depth 4787 Viscosity 62 Filtrate 6

Tool Open @ 2:35 PM Initial Blow WEAK SURFACE BLOW TO 9.5" IN 15 MINUTES

Final Blow GOOD BLOW OFF BOTTOM IN 15 MINUTES

Recovery - Total Feet 302 Flush Tool? NO

Rec. 958 Feet of GAS IN PIPE
Rec. 302 Feet of CLEAN GASSY OIL-1%GAS/99%OIL
Rec. _____ Feet of _____
Rec. _____ Feet of _____
Rec. _____ Feet of _____

BHT 125 °F Gravity 31 °API @ 70 °F Corrected Gravity 30 °API
RW _____ @ _____ °F Chlorides _____ ppm Recovery Chlorides 1300 ppm System

(A) Initial Hydrostatic Mud 2325.2 PSI AK1 Recorder No. 2023 Range 4000

(B) First Initial Flow Pressure 39.7 PSI @ (depth) 4777 w / Clock No. 7452

(C) First Final Flow Pressure 43.0 PSI AK1 Recorder No. 13308 Range 4700

(D) Initial Shut-in Pressure 1225.5 PSI @ (depth) 4782 w / Clock No. 8689

(E) Second Initial Flow Pressure 66.0 PSI AK1 Recorder No. _____ Range _____

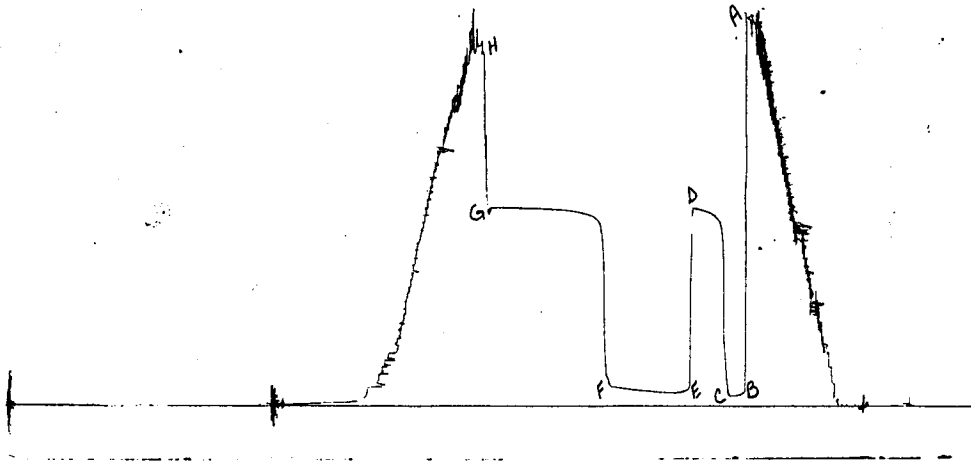
(F) Second Final Flow Pressure 114.6 PSI @ (depth) _____ w / Clock No. _____

(G) Final Shut-in Pressure 1223.6 PSI Initial Opening 15 Final Flow 60

(H) Final Hydrostatic Mud 2286.9 PSI Initial Shut-in 30 Final Shut-in 90

Our Representative MARK HERSKOWITZ

CHART PAGE



This is an actual photograph of recorder chart

	FIELD READING	OFFICE READING
(A) INITIAL HYDROSTATIC MUD	2301	2325.2
(B) FIRST INITIAL FLOW PRESSURE	33	39.7
(C) FIRST FINAL FLOW PRESSURE	44	43
(D) INITIAL CLOSED-IN PRESSURE	1225	1225.5
(E) SECOND INITIAL FLOW PRESSURE	55	66
(F) SECOND FINAL FLOW PRESSURE	109	114.6
(G) FINAL CLOSED-IN PRESSURE	1235	1223.6
(H) FINAL HYDROSTATIC MUD	2270	2286.9

DST #

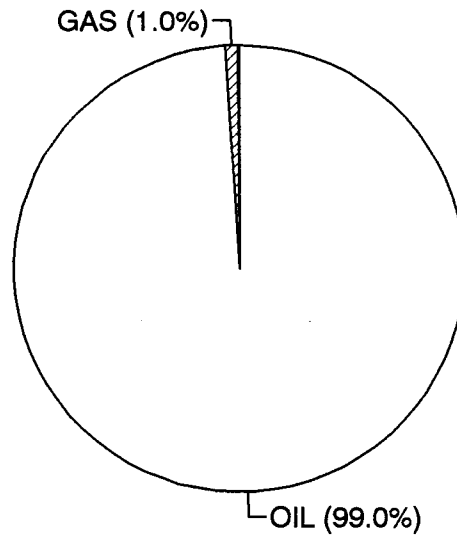
1

TICKET

4613

SAMPLE #	TOTAL FEET	GAS		OIL		WATER		MUD	
		%	FEET	%	FEET	%	FEET	%	FEET
1	302	1	3.02	99	298.98	0	0	0	0
2			0		0		0		0
3			0		0		0		0
4			0		0		0		0
5			0		0		0		0
TOTAL	302	1.00	3.02	99.00	298.98	0.00	0	0	0

	HRS OP	BBL/DAY
BBL OIL=	1.4620122 *	1.25 28.070634
BBL WATER=	0 *	0
BBL MUD=	0	
BBL GAS=	0.0147678	



MUD
OIL
GAS
WTR

GARDEN CITY
INITIAL

DST #1
SHUTIN
15 TOTAL FLOW

TIME

Slope 167.53 psi/cycle
P * 1255 psi

Log <>

TIME(MIN) Pws (psi) Horn T PRESSURE Horn T

	6	494.0	0.544	494.0	4
	12	1186.6	0.352	692.6	2
X	18	1210.9	0.263	24.3	2
	24	1222.6	0.211	11.7	2
X	30	1225.5	0.176	2.9	2

GARDEN CITY
FINAL

DST #1
SHUTIN
75 TOTAL FLOW

TIME

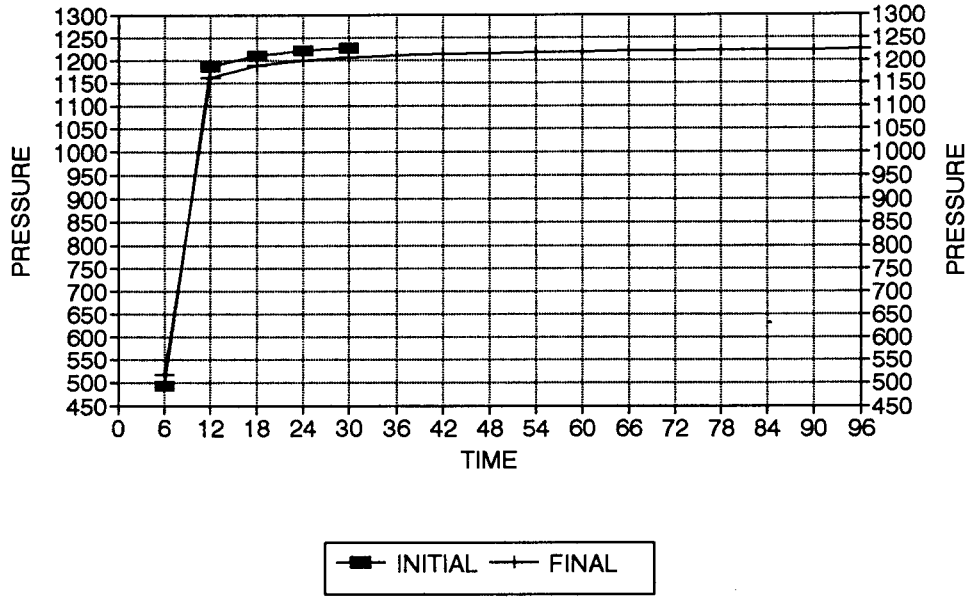
Slope 75.78 psi/cycle
P * 1243 psi

Log <>

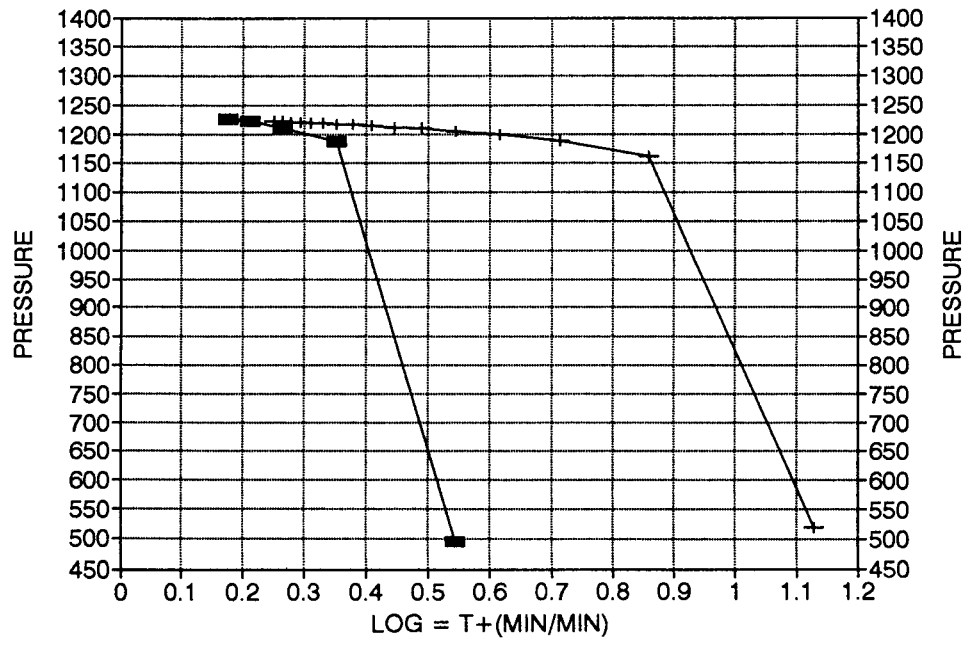
TIME(MIN) Pws (psi) Horn T PRESSURE Horn T

	6	518.6	1.130	518.6	14
	12	1161.5	0.860	642.9	7
	18	1188.6	0.713	27.1	5
	24	1200.2	0.615	11.6	4
	30	1205.1	0.544	4.9	4
	36	1209.9	0.489	4.8	3
	42	1211.9	0.445	2.0	3
	48	1214.8	0.409	2.9	3
	54	1216.8	0.378	2.0	2
	60	1217.7	0.352	0.9	2
	66	1218.7	0.330	1.0	2
	72	1219.7	0.310	1.0	2
	78	1220.7	0.293	1.0	2
X	84	1221.6	0.277	0.9	2
	90	1222.6	0.263	1.0	2
X	96	1223.6	0.251	1.0	2

GARDEN CITY NE #1 DELTA T DELTA P



HORNER PLOT



INITIAL FLOW

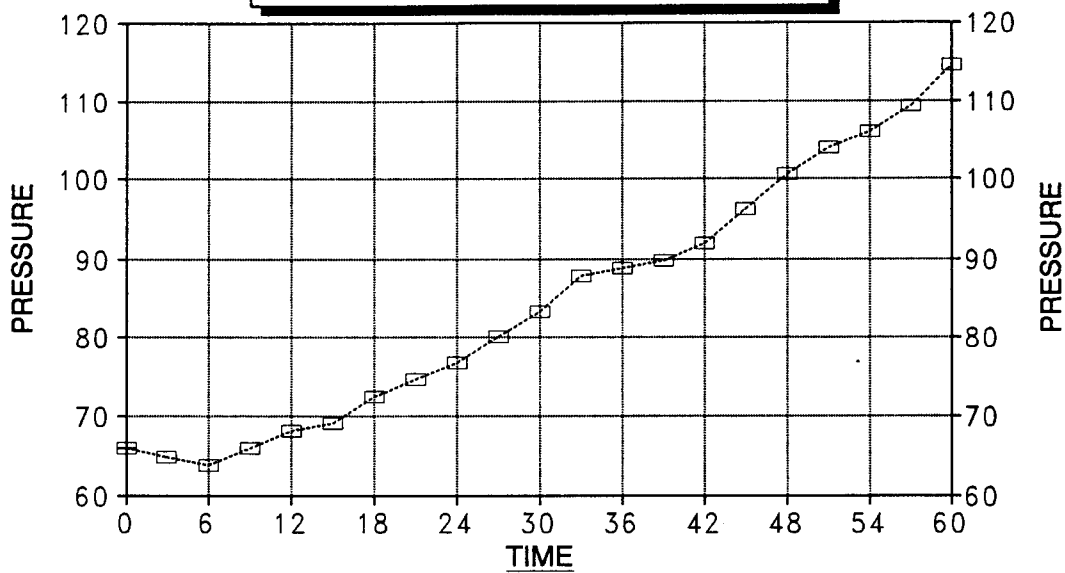
RECORDER #	2023	DST # 1
TIME(MIN)	PRESSURE	<>PRESSURE
0	39.7	39.7
3	36.4	-3.3
6	37.5	1.1
9	40.8	3.3
12	41.9	1.1
15	43	1.1

FINAL FLOW

RECORDER #	2023	DST # 1
TIME(MIN)	PRESSURE	<> PRESSURE
0	66	66
3	64.9	-1.1
6	63.8	-1.1
9	66	2.2
12	68.1	2.1
15	69.2	1.1
18	72.5	3.3
21	74.7	2.2
24	76.8	2.1
27	80.1	3.3
30	83.3	3.2
33	87.7	4.4
36	88.8	1.1
39	89.8	1
42	92	2.2
45	96.3	4.3
48	100.6	4.3
51	103.9	3.3
54	106	2.1
57	109.3	3.3
60	114.6	5.3

DELTA T DELTA P

FINAL FLOW - DST #1



---□--- GARDEN CITY NE #1

INITIAL PRODUCTION CORRECTED TO PSEUDO STEADY FLOW STATE:

16.200

Shut-In

1	0.039	43.03098
2	0.167	180.6785
3	0.475	494.0523
4	1.148	1145.999
5	1.19	1186.67
6	1.206	1202.193
7	1.215	1210.97
8	1.222	1217.794
9	1.227	1222.668
10	1.229	1224.617
11	1.23	1225.591

1	0.105	114.6869
2	0.5	518.64
3	1.164	1161.503
4	1.192	1188.604
5	1.204	1200.242
6	1.209	1205.119
7	1.214	1209.995
8	1.216	1211.945
9	1.219	1214.87
10	1.221	1216.819
11	1.222	1217.794
12	1.223	1218.769
13	1.224	1219.744
14	1.225	1220.718
15	1.226	1221.693
16	1.227	1222.668
17	1.228	1223.642

1	0.036	39.7326
2	0.033	36.43228
3	0.034	37.5326
4	0.037	40.83228
5	0.038	41.93173
6	0.039	43.03098

1	0.059	64.90944
2	0.06	66
3	0.058	63.81856
4	0.06	66
5	0.062	68.17908
6	0.063	69.26811
7	0.066	72.53318
8	0.068	74.7082
9	0.07	76.88188
10	0.073	80.13986
11	0.076	83.3948
12	0.08	87.73
13	0.081	88.81235
14	0.082	89.89435
15	0.084	92.05728
16	0.088	96.37892
17	0.092	100.6949
18	0.095	103.9282
19	0.097	106.082
20	0.1	109.31
21	0.105	114.6869

TRILOBITE TESTING COMPANY L.L.C.

P.O. Box 362 • Hays, Kansas 67601

Test Ticket

No 4613

Well Name & No. <u>GARDEN CITY NE 1st</u>	Test No. <u>1</u>	Date <u>5-26-92</u>
Company <u>BEAR EXCO INC</u>	Zone Tested <u>ST LOUIS 'B'</u>	
Address <u>970 FOURTH FINANCIAL CENTER WICHITA</u>	Location <u>2918 KB</u>	
Co. Rep./Geo. <u>CHARLES</u>	Cont. <u>BEAR EXCO RIG 1</u>	Est. Ft. of Pay <u>5</u>
Location: Sec. <u>20</u>	Twp. <u>22s</u>	Rge. <u>33w</u>
	Co. <u>FINNEY</u>	State <u>KS</u>
No. of Copies <u>9</u>	Distribution Sheet <u>Yes</u>	No Turnkey <u>Yes</u>
		No Evaluation <u>Yes</u>

Interval Tested <u>4772 - 4787</u>	Drill Pipe Size <u>4 1/2 XH</u>
Anchor Length <u>15</u>	Top Choke - 1" _____ Bottom Choke - 1/4" _____
Top Packer Depth <u>4767</u>	Hole Size - 77/8" _____ Rubber Size - 6 3/4" _____
Bottom Packer Depth <u>4772</u>	Wt. Pipe I.D. - 2.7 Ft. Run _____
Total Depth <u>4787</u>	Drill Collar - 2.25 Ft. Run <u>610</u>
Mud Wt. <u>9.1</u> <u>6CM 4#</u> lb/gal.	Viscosity <u>62</u> Filtrate <u>6.0</u>
Tool Open @ <u>2:35 PM</u>	Initial Blow <u>WEAK SUR TO 9 1/2" IN 15 MIN</u>

Final Blow Good Blow OFF BOTTOM IN 15 MIN

Recovery - Total Feet	Feet of Gas In Pipe	Flush Tool?
<u>302</u>	<u>958</u>	_____
Rec. <u>302</u> Feet Of <u>6.6</u> <u>0.1</u>	<u>1</u> % gas <u>99</u> % Oil	% water _____ % mud _____
Rec. _____ Feet Of _____	% gas _____ % Oil _____	% water _____ % mud _____
Rec. _____ Feet Of _____	% gas _____ % Oil _____	% water _____ % mud _____
Rec. _____ Feet Of _____	% gas _____ % Oil _____	% water _____ % mud _____
Rec. _____ Feet Of _____	% gas _____ % Oil _____	% water _____ % mud _____

BHT 125 °F Gravity 31 °API @ 20 °F Corrected Gravity 30 °API

RW _____ @ _____ °F Chlorides _____ ppm Recovery Chlorides 1300 ppm System

(A) Initial Hydrostatic Mud <u>2301</u> PSI	AK1 Recorder No. <u>2023</u> Range <u>4000</u>
(B) First Initial Flow Pressure <u>33</u> PSI	@ (depth) <u>4777</u> w/Clock No. <u>7452</u>
(C) First Final Flow Pressure <u>44</u> PSI	AK1 Recorder No. <u>13308</u> Range <u>4700</u>
(D) Initial Shut-In Pressure <u>1225</u> PSI	@ (depth) <u>4782</u> w/Clock No. <u>8687</u>
(E) Second Initial Flow Pressure <u>55</u> PSI	AK1 Recorder No. _____ Range _____
(F) Second Final Flow Pressure <u>109</u> PSI	@ (depth) _____ w/Clock No. _____
(G) Final Shut-In Pressure <u>1235</u> PSI	Initial Opening <u>15</u> Test <input checked="" type="checkbox"/> <u>550.00</u>
(H) Final Hydrostatic Mud <u>2270</u> PSI	Initial Shut-In <u>30</u> Jars <input checked="" type="checkbox"/> <u>200.00</u>

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>60</u>	Safety Joint <input checked="" type="checkbox"/> <u>50.00</u>
Final Shut-In <u>90</u>	Straddle _____
	Circ. Sub <input checked="" type="checkbox"/> <u>NC</u>
	Sampler _____

Approved By Charles M. Spitzer
 Our Representative Charles M. Spitzer

Extra Packer _____
 Other evaluation 50.00
 TOTAL PRICE \$ 850.00

TRILOBITE TESTING, L.L.C.

P.O. Box 362 • Hays, Kansas 67601

Drill-Stem Test Data

Well Name GARDEN CITY NE #1 Test No. 2 Date 5/27/92
Company BEREXCO INC Zone ST LOUIS "C"
Address 970 4th FINANCIAL CNTR WICHITA KS 67202 Elevation 2918
Co. Rep./Geo. CHARLIE SPRADLIN Cont. BEREDCO DRLG #1 Est. Ft. of Pay 5
Location: Sec. 20 Twp. 22S Rge. 33W Co. FINNEY State KS

Interval Tested 4790-4818 Drill Pipe Size 4.5 XH
Anchor Length 28 Wt. Pipe I.D. - 2.7 Ft. Run _____
Top Packer Depth 4785 Drill Collar - 2.25 Ft. Run 610
Bottom Packer Depth 4790 Mud Wt. 9.1 lb/Gal.
Total Depth 4818 Viscosity 56 Filtrate 6

Tool Open @ 6:45 AM Initial Blow WEAK SURFACE BLOW FOR 3 MINUTES-NO BLOW
Final Blow NO BLOW

Recovery - Total Feet 20 Flush Tool? NO

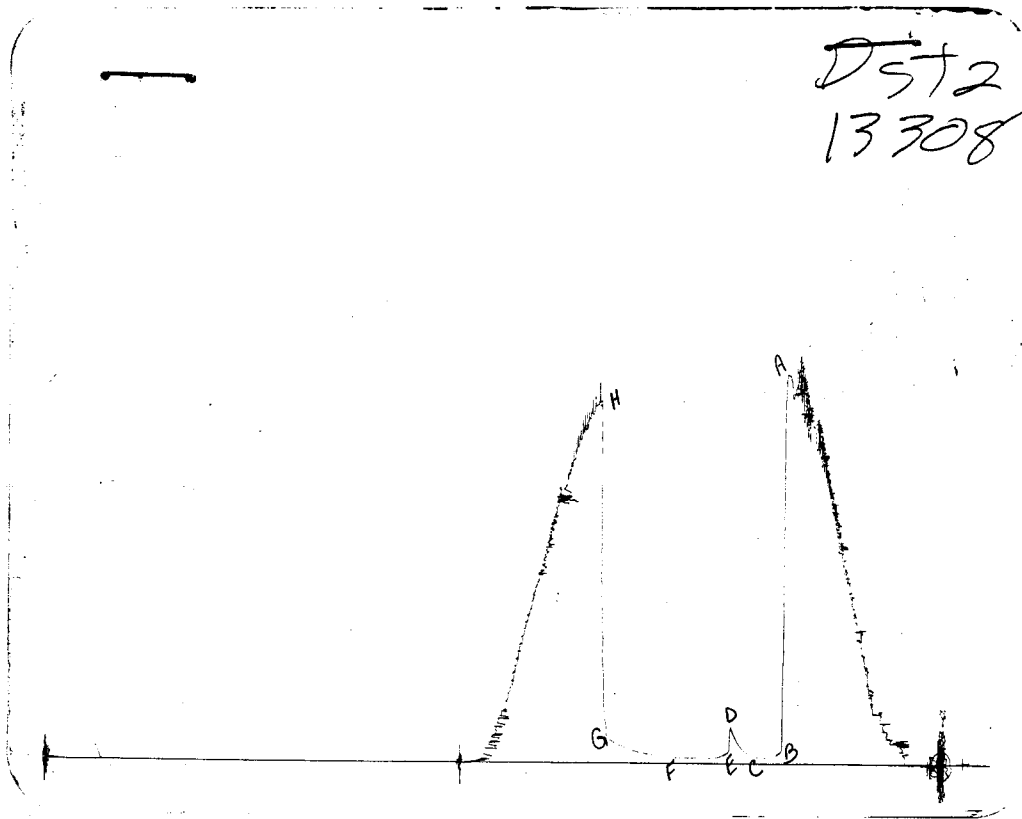
Rec. 20 Feet of OIL STAINED MUD
Rec. _____ Feet of _____
Rec. _____ Feet of _____
Rec. _____ Feet of _____
Rec. _____ Feet of _____

BHT 125 °F Gravity _____ °API @ _____ °F Corrected Gravity _____ °API
RW _____ @ _____ °F Chlorides _____ ppm Recovery Chlorides 1300 ppm System

(A) Initial Hydrostatic Mud 2312.6 PSI AK1 Recorder No. 2023 Range 4000
(B) First Initial Flow Pressure 21.4 PSI @ (depth) 4792 w / Clock No. 7452
(C) First Final Flow Pressure 23.6 PSI AK1 Recorder No. 13308 Range 4700
(D) Initial Shut-in Pressure 260.4 PSI @ (depth) 4813 w / Clock No. 8689
(E) Second Initial Flow Pressure 23.6 PSI AK1 Recorder No. _____ Range _____
(F) Second Final Flow Pressure 23.6 PSI @ (depth) _____ w / Clock No. _____
(G) Final Shut-in Pressure 155.4 PSI Initial Opening 15 Final Flow 30
(H) Final Hydrostatic Mud 2244.7 PSI Initial Shut-in 30 Final Shut-in 60

Our Representative MARK HERSKOWITZ

CHART PAGE



This is an actual photograph of recorder chart

	FIELD READING	OFFICE READING
(A) INITIAL HYDROSTATIC MUD	2301	2312.6
(B) FIRST INITIAL FLOW PRESSURE	22	21.4
(C) FIRST FINAL FLOW PRESSURE	22	23.6
(D) INITIAL CLOSED-IN PRESSURE	256	260.4
(E) SECOND INITIAL FLOW PRESSURE	22	23.6
(F) SECOND FINAL FLOW PRESSURE	22	23.6
(G) FINAL CLOSED-IN PRESSURE	152	155.4
(H) FINAL HYDROSTATIC MUD	2240	2244.7

TRILOBITE TESTING COMPANY L.L.C.

P.O. Box 362 • Hays, Kansas 67601

Test Ticket

No 4614

Well Name & No. GARDEN CITY No 1 Test No. 2 Date 5-27-92
 Company BEREXCO INC Zone Tested ST LOUIS C
 Address 970 FOURTH FINANCIAL CENTER WICPITZ Elevation 2918 KFB
 Co. Rep./Geo. CHARLES Cont. BEREXCO RIG 1 Est. Ft. of Pay 5
 Location: Sec. 20 Twp. 22s Rge. 30w Co. FINNEY State KS
 No. of Copies 9 Distribution Sheet Yes No Turnkey Yes No Evaluation

Interval Tested 4790-4818 Drill Pipe Size 4 1/2 x H
 Anchor Length 28 Top Choke — 1" Bottom Choke — 3/4"
 Top Packer Depth 4785 Hole Size — 7 7/8" Rubber Size — 6 3/4"
 Bottom Packer Depth 4790 Wt. Pipe I.D. — 2.7 Ft. Run
 Total Depth 4818 Drill Collar — 2.25 Ft. Run 610
 Mud Wt. 9.1 LCM 5 lb/gal. Viscosity 56 Filtrate 6.0
 Tool Open @ 6:45 AM Initial Blow WEAK SUR BLOW FOR 3 MIN NO BLOW

Final Blow No Blow

Recovery — Total Feet	Feet of Gas In Pipe	Flush Tool?
Rec. <u>20</u> Feet Of <u>Oil & Mud</u>	%gas <u>TR</u> %oil	%water %mud
Rec. _____ Feet Of _____	%gas %oil	%water %mud
Rec. _____ Feet Of _____	%gas %oil	%water %mud
Rec. _____ Feet Of _____	%gas %oil	%water %mud
Rec. _____ Feet Of _____	%gas %oil	%water %mud

BHT 125 °F Gravity _____ °API @ _____ °F Corrected Gravity _____ °API

RW _____ @ _____ °F Chlorides _____ ppm Recovery Chlorides 1300 ppm System

- (A) Initial Hydrostatic Mud 2301 PSI AK1 Recorder No. 2023 Range 4000
- (B) First Initial Flow Pressure 22 PSI @ (depth) 4792 w/Clock No. 7452
- (C) First Final Flow Pressure 22 PSI AK1 Recorder No. 13308 Range 4700
- (D) Initial Shut-in Pressure 256 PSI @ (depth) 4813 w/Clock No. 8489
- (E) Second Initial Flow Pressure 22 PSI AK1 Recorder No. _____ Range _____
- (F) Second Final Flow Pressure 22 PSI @ (depth) _____ w/Clock No. _____
- (G) Final Shut-in Pressure 152 PSI Initial Opening 15 Test
- (H) Final Hydrostatic Mud 2240 PSI Initial Shut-in 30 Jars

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Final Flow 30 Safety Joint
 Final Shut-in 60 Straddle _____
 Circ. Sub NC
 Sampler _____

Approved By _____
 Our Representative Mark Hershberg

Extra Packer _____
 Other _____
 TOTAL PRICE \$ 800.00