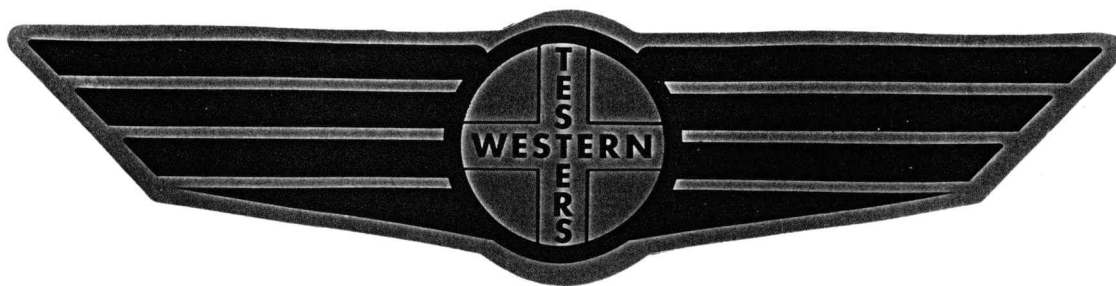


FORMATION TEST REPORT



Home Office:

Wichita, Kansas 67201

P.O. Box 1599

Phone 1-800-688-7021

COMPANY CHARTER PRODUCTION CO. LEASE & WELL NO. #1 WILLIAMS SEC. 17 TWP. 31S RGE. 40W TEST NO. 1 DATE 1/19/94

DST REPORT

GENERAL INFORMATION

DATE	: 1-19-94	TICKET	: 19971
CUSTOMER	: CHARTER PRODUCTION CO.	LEASE	: WILLIAMS
WELL	: #1	TEST: 1	GEOLOGIST: TYLER SANDERS
ELEVATION	: 3328 K.B.	FORMATION	: MORROW B SAND
SECTION	: 17	TOWNSHIP	: 31S
RANGE	: 40W	COUNTY: MORTON	STATE : KS
GAUGE SN#	: 3849	RANGE : 4200	CLOCK : 12

WELL INFORMATION

PERFORATION INTERVAL FROM:	5036.00 ft	TO:	5107.00 ft	TVD:	5107.0 ft
DEPTH OF SELECTIVE ZONE:				TEST TYPE:	OIL
DEPTH OF RECORDERS:	5058.0 ft	5061.0 ft			
TEMPERATURE:	128.0				
DRILL COLLAR LENGTH:	574.0 ft	I.D.:	2.250 in		
WEIGHT PIPE LENGTH :	0.0 ft	I.D.:	0.000 in		
DRILL PIPE LENGTH :	4434.0 ft	I.D.:	3.800 in		
TEST TOOL LENGTH :	28.0 ft	TOOL SIZE :	5.500 in		
ANCHOR LENGTH :	71.0 ft	ANCHOR SIZE:	5.500 in		
SURFACE CHOKE SIZE :	0.750 in	BOTTOM CHOKE SIZE:	0.750 in		
MAIN HOLE SIZE :	7.875 in	TOOL JOINT SIZE :	4.5XH		
PACKER DEPTH:	5031.0 ft	SIZE:	6.630 in		
PACKER DEPTH:	5036.0 ft	SIZE:	6.630 in		
PACKER DEPTH:	0.0 ft	SIZE:	0.000 in		
PACKER DEPTH:	0.0 ft	SIZE:	0.000 in		

MUD INFORMATION

DRILLING CON. :	TRANSPAC #2	VISCOSITY :	50.00 cp
MUD TYPE :	CHEMICAL	WATER LOSS:	9.600 cc
WEIGHT :	9.000 ppg		
CHLORIDES :	1500 ppm	SERIAL NUMBER:	402
JARS-MAKE :	WTC	REVERSED OUT?:	NO
DID WELL FLOW?:	NO		

COMMENTS

Comment

SURFACE BLOW BUILDING TO 2" IN BUCKET IN 30
MINUTES ON INITIAL FLOW PERIOD. VERY WEAK BLOW
.25" TO 1" IN 5 MINUTES THEN STABILIZED ON FINAL

DST REPORT (CONTINUED)

COMMENTS (CONTINUED)

Comment

FLOW PERIOD.

FLUID RECOVERY

Feet of Fluid	% Oil	% Gas	% Water	% Mud	Comments
50.0	0.0	0.0	0.0	100.0	MUD
0.0	0.0	0.0	0.0	0.0	VERY SLI. SHOW OF OIL IN
0.0	0.0	0.0	0.0	0.0	TEST TOOL.

RATE INFORMATION

OIL VOLUME:	0.0000	STB	TOTAL FLOW TIME:	60.0000	min.
GAS VOLUME:	0.0000	SCF	AVERAGE OIL RATE:	0.0000	STB/D
MUD VOLUME:	0.2459	STB	AVERAGE WATER RATE:	0.0000	STB/D
WATER VOLUME:	0.0000	STB			
TOTAL FLUID :	0.2459	STB			

FIELD TIME & PRESSURE INFORMATION

INITIAL HYDROSTATIC PRESSURE: 2389.00

Description	Duration	p1	p End
INITIAL FLOW	30.00	36.00	40.00
INITIAL SHUT-IN	60.00		72.00
FINAL FLOW	30.00	40.00	42.00
FINAL SHUT-IN	60.00		53.00

FINAL HYDROSTATIC PRESSURE: 2358.00

DST REPORT (CONTINUED)

OFFICE TIME & PRESSURE INFORMATION

INITIAL HYDROSTATIC PRESSURE: 2414.00

Description	Duration	p1	p End
INITIAL FLOW	30.00	50.00	50.00
INITIAL SHUT-IN	60.00		82.00
FINAL FLOW	30.00	49.00	49.00
FINAL SHUT-IN	60.00		61.00

FINAL HYDROSTATIC PRESSURE: 2370.00

PRESSURE TRANSIENT REPORT

GENERAL INFORMATION

DATE : 1-19-94	TICKET : 19971
CUSTOMER : CHARTER PRODUCTION CO.	LEASE : WILLIAMS
WELL : #1 TEST: 1	GEOLOGIST: TYLER SANDERS
ELEVATION: 3328 K.B.	FORMATION: MORROW B SAND
SECTION : 17	TOWNSHIP : 31S
RANGE : 40W	STATE : KS
GAUGE SN#: 3849	CLOCK : 12
COUNTY: MORTON	
RANGE : 4200	

INITIAL FLOW

Time (min)	Pressure	Delta P
0.00	50.00	50.00
5.00	50.00	0.00
10.00	50.00	0.00
15.00	50.00	0.00
20.00	50.00	0.00
25.00	50.00	0.00
30.00	50.00	0.00

INITIAL SHUT IN

Time (min)	Pressure	Delta P	Horner T
3.00	50.00	50.00	17.67
6.00	50.00	0.00	9.33
9.00	50.00	0.00	6.56
12.00	51.00	1.00	5.17
15.00	53.00	2.00	4.33
18.00	55.00	2.00	3.78
21.00	57.00	2.00	3.38
24.00	59.00	2.00	3.08
27.00	61.00	2.00	2.85
30.00	63.00	2.00	2.67
33.00	65.00	2.00	2.52
36.00	67.00	2.00	2.39
39.00	69.00	2.00	2.28
42.00	71.00	2.00	2.19
45.00	73.00	2.00	2.11
48.00	75.00	2.00	2.04
51.00	77.00	2.00	1.98
54.00	79.00	2.00	1.93
57.00	81.00	2.00	1.88

PRESSURE TRANSIENT REPORT (CONTINUED)

INITIAL SHUT IN (CONTINUED)

<u>Time (min)</u>	<u>Pressure</u>	<u>Delta P</u>	<u>Horner T</u>
60.00	82.00	1.00	1.83

FINAL FLOW

<u>Time (min)</u>	<u>Pressure</u>	<u>Delta P</u>
0.00	49.00	49.00
5.00	49.00	0.00
10.00	49.00	0.00
15.00	49.00	0.00
20.00	49.00	0.00
25.00	49.00	0.00
30.00	49.00	0.00

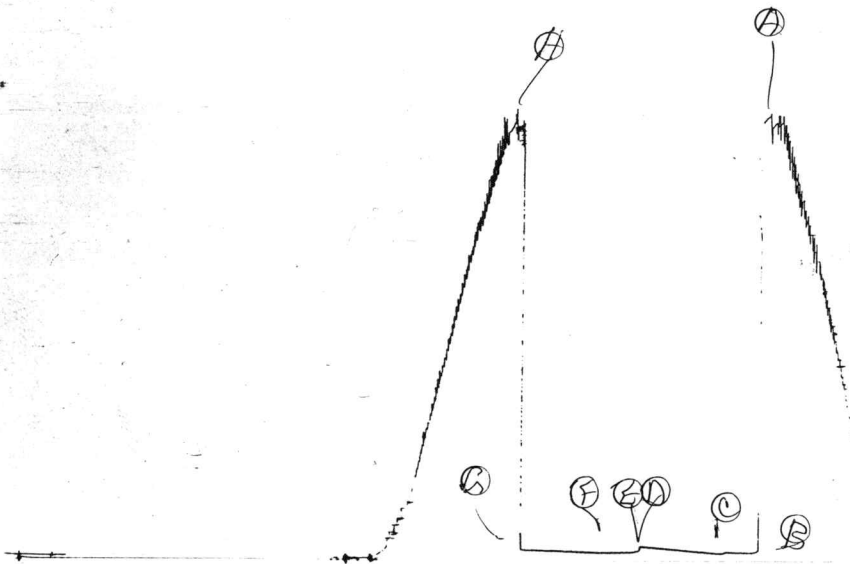
FINAL SHUT IN

<u>Time (min)</u>	<u>Pressure</u>	<u>Delta P</u>	<u>Horner T</u>
3.00	49.00	49.00	21.00
6.00	49.00	0.00	11.00
9.00	49.00	0.00	7.67
12.00	50.00	1.00	6.00
15.00	51.00	1.00	5.00
18.00	52.00	1.00	4.33
21.00	53.00	1.00	3.86
24.00	54.00	1.00	3.50
27.00	55.00	1.00	3.22
30.00	56.00	1.00	3.00
33.00	57.00	1.00	2.82
36.00	58.00	1.00	2.67
39.00	59.00	1.00	2.54
42.00	60.00	1.00	2.43
45.00	60.00	0.00	2.33
48.00	60.00	0.00	2.25
51.00	61.00	1.00	2.18
54.00	61.00	0.00	2.11
57.00	61.00	0.00	2.05
60.00	61.00	0.00	2.00

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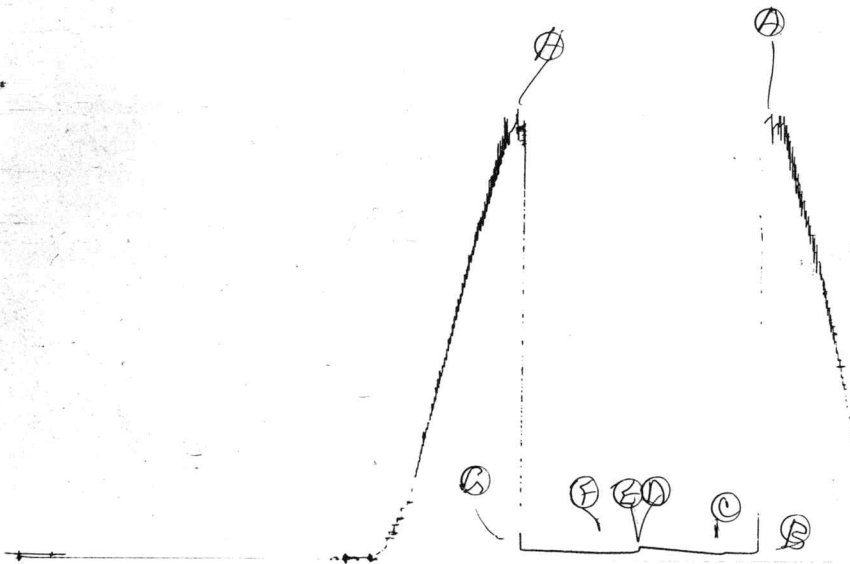
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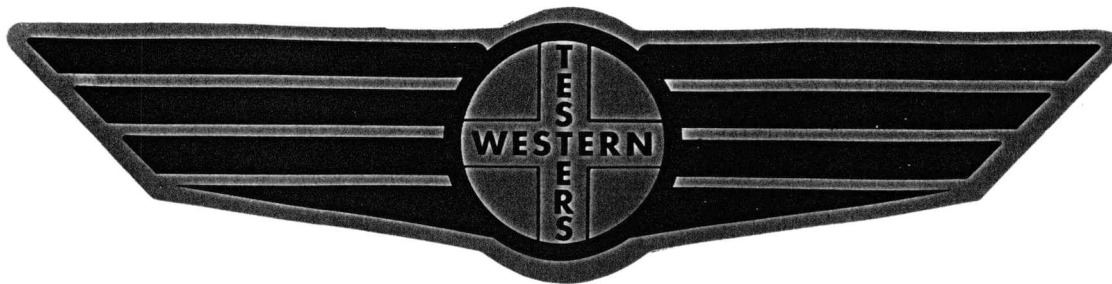
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FORMATION TEST REPORT



Home Office:

Wichita, Kansas 67201

P.O. Box 1599

Phone 1-800-688-7021

DST REPORT

GENERAL INFORMATION

DATE : 1-20-94
CUSTOMER : CHARTER PRODUCTION CO.
WELL : #1 TEST: 2
ELEVATION: 3328 K.B.
SECTION : 17
RANGE : 40W COUNTY: MORTON
GAUGE SN#: 3849 RANGE : 4200

TICKET : 19972
LEASE : WILLIAMS
GEOLOGIST: TYLER SANDERS
FORMATION: LOWER MORROW
TOWNSHIP : 31S
STATE : KS
CLOCK : 12

WELL INFORMATION

PERFORATION INTERVAL FROM: 5331.00 ft TO: 5375.00 ft TVD: 5375.0 ft
DEPTH OF SELECTIVE ZONE: TEST TYPE: GAS
DEPTH OF RECORDERS: 5353.0 ft 5356.0 ft
TEMPERATURE: 130.0

DRILL COLLAR LENGTH:	606.0 ft	I.D.:	2.250 in
WEIGHT PIPE LENGTH :	0.0 ft	I.D.:	0.000 in
DRILL PIPE LENGTH :	4697.0 ft	I.D.:	3.800 in
TEST TOOL LENGTH :	28.0 ft	TOOL SIZE :	5.500 in
ANCHOR LENGTH :	44.0 ft	ANCHOR SIZE:	5.500 in
SURFACE CHOKE SIZE :	0.750 in	BOTTOM CHOKE SIZE:	0.750 in
MAIN HOLE SIZE :	7.875 in	TOOL JOINT SIZE :	4.5XH
PACKER DEPTH:	5326.0 ft	SIZE:	6.630 in
PACKER DEPTH:	5331.0 ft	SIZE:	6.630 in
PACKER DEPTH:	0.0 ft	SIZE:	0.000 in
PACKER DEPTH:	0.0 ft	SIZE:	0.000 in

MUD INFORMATION

DRILLING CON. : TRANSPAC #2
MUD TYPE : CHEMICAL
WEIGHT : 9.000 ppg
CHLORIDES : 1500 ppm
JARS-MAKE : WTC
DID WELL FLOW?: NO

VISCOSITY : 56.00 cp
WATER LOSS: 11.200 cc

SERIAL NUMBER: 402
REVERSED OUT?: NO

COMMENTS

Comment

VERY WEAK 1/2" BLOW SLOWLY BUIDLING TO 9.5" IN
BUCKET IN 60 MINUTES ON INITIAL FLOW PERIOD. FAIR
3" BLOW TO STRONG OFF BOTTOM OF BUCKET IN 43 MIN.

DST REPORT (CONTINUED)

COMMENTS (CONTINUED)

Comment

ON FINAL FLOW PERIOD.

FLUID RECOVERY

Feet of Fluid	% Oil	% Gas	% Water	% Mud	Comments
60.0	0.0	0.0	3.0	100.0	MUD
0.0	0.0	0.0	0.0	0.0	570' OF GAS ABOVE FUID.

RATE INFORMATION

OIL VOLUME: 0.0000 STB
 GAS VOLUME: 0.0000 SCF
 MUD VOLUME: 0.2950 STB
 WATER VOLUME: 0.0089 STB
 TOTAL FLUID : 0.3039 STB

TOTAL FLOW TIME: 120.0000 min.
 AVERAGE OIL RATE: 0.0000 STB/D
 AVERAGE WATER RATE: 3.6468 STB/D

FIELD TIME & PRESSURE INFORMATION

INITIAL HYDROSTATIC PRESSURE: 2510.00

Description	Duration	p1	p End
INITIAL FLOW	60.00	25.00	34.00
INITIAL SHUT-IN	60.00		455.00
FINAL FLOW	60.00	38.00	44.00
FINAL SHUT-IN	60.00		480.00

FINAL HYDROSTATIC PRESSURE: 2442.00

DST REPORT (CONTINUED)

OFFICE TIME & PRESSURE INFORMATION

INITIAL HYDROSTATIC PRESSURE: 2542.00

Description	Duration	p1	p End
INITIAL FLOW	60.00	53.00	57.00
INITIAL SHUT-IN	60.00		479.00
FINAL FLOW	60.00	66.00	69.00
FINAL SHUT-IN	57.00		504.00

FINAL HYDROSTATIC PRESSURE: 2449.00

PRESSURE TRANSIENT REPORT (CONTINUED)

INITIAL SHUT IN (CONTINUED)

Time (min)	Pressure	Delta P	Horner T
42.00	311.00	29.00	2.43
45.00	338.00	27.00	2.33
48.00	367.00	29.00	2.25
51.00	405.00	38.00	2.18
54.00	437.00	32.00	2.11
57.00	467.00	30.00	2.05
60.00	479.00	12.00	2.00

FINAL FLOW

Time (min)	Pressure	Delta P
0.00	66.00	66.00
5.00	66.00	0.00
10.00	66.00	0.00
15.00	66.00	0.00
20.00	66.00	0.00
25.00	66.00	0.00
30.00	66.00	0.00
35.00	67.00	1.00
40.00	67.00	0.00
45.00	67.00	0.00
50.00	67.00	0.00
55.00	68.00	1.00
60.00	69.00	1.00

FINAL SHUT IN

Time (min)	Pressure	Delta P	Horner T
3.00	80.00	80.00	21.00
6.00	96.00	16.00	11.00
9.00	109.00	13.00	7.67
12.00	129.00	20.00	6.00
15.00	151.00	22.00	5.00
18.00	170.00	19.00	4.33
21.00	193.00	23.00	3.86
24.00	212.00	19.00	3.50
27.00	237.00	25.00	3.22
30.00	257.00	20.00	3.00

PRESSURE TRANSIENT REPORT (CONTINUED)

FINAL SHUT IN (CONTINUED)

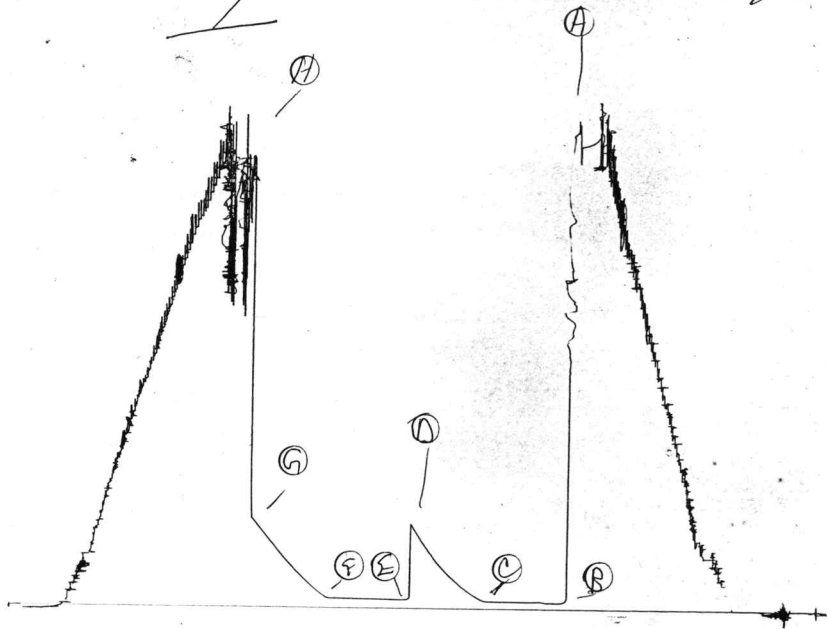
<u>Time (min)</u>	<u>Pressure</u>	<u>Delta P</u>	<u>Horner T</u>
33.00	284.00	27.00	2.82
36.00	305.00	21.00	2.67
39.00	333.00	28.00	2.54
42.00	361.00	28.00	2.43
45.00	387.00	26.00	2.33
48.00	415.00	28.00	2.25
51.00	445.00	30.00	2.18
54.00	468.00	23.00	2.11
57.00	504.00	36.00	2.05

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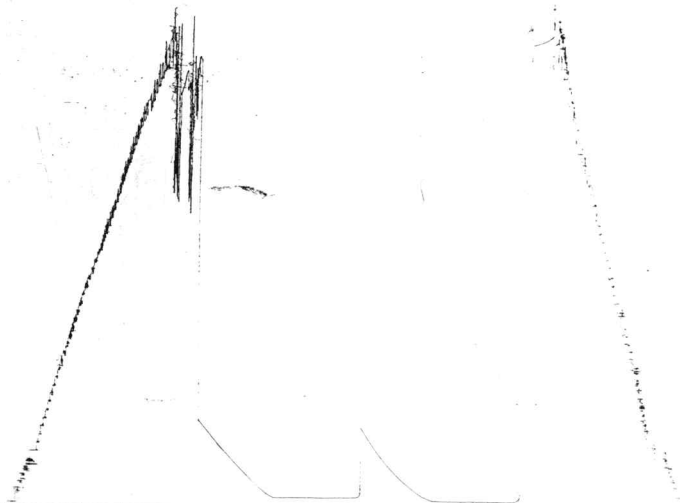
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PRESSURE TRANSIENT REPORT

GENERAL INFORMATION

DATE : 1-20-94	TICKET : 19972
CUSTOMER : CHARTER PRODUCTION CO.	LEASE : WILLIAMS
WELL : #1 TEST: 2	GEOLOGIST: TYLER SANDERS
ELEVATION: 3328 K.B.	FORMATION: LOWER MORROW
SECTION : 17	TOWNSHIP : 31S
RANGE : 40W COUNTY: MORTON	STATE : KS
GAUGE SN#: 3849 RANGE : 4200	CLOCK : 12

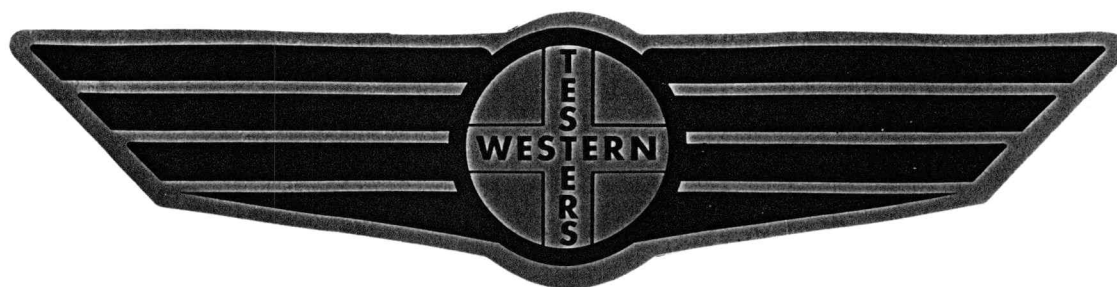
INITIAL FLOW

Time (min)	Pressure	Delta P
0.00	53.00	53.00
5.00	53.00	0.00
10.00	53.00	0.00
15.00	53.00	0.00
20.00	54.00	1.00
25.00	55.00	1.00
30.00	56.00	1.00
35.00	56.00	0.00
40.00	56.00	0.00
45.00	56.00	0.00
50.00	57.00	1.00
55.00	57.00	0.00
60.00	57.00	0.00

INITIAL SHUT IN

Time (min)	Pressure	Delta P	Horner T
3.00	63.00	63.00	21.00
6.00	74.00	11.00	11.00
9.00	85.00	11.00	7.67
12.00	97.00	12.00	6.00
15.00	114.00	17.00	5.00
18.00	132.00	18.00	4.33
21.00	147.00	15.00	3.86
24.00	167.00	20.00	3.50
27.00	184.00	17.00	3.22
30.00	209.00	25.00	3.00
33.00	232.00	23.00	2.82
36.00	253.00	21.00	2.67
39.00	282.00	29.00	2.54

FORMATION TEST REPORT



Home Office:

Wichita, Kansas 67201

P.O. Box 1599

Phone 1-800-688-7021

COMPANY CHARTER PRODUCTION CO LEASE & WELL NO. #1 WILLIAMS SEC. 17 TWP. 31S RGE. 40W TEST NO. 3 DATE 1/21/94

DST REPORT

GENERAL INFORMATION

DATE	: 1-21-94	TICKET	: 19973
CUSTOMER	: CHARTER PRODUCTION CO.	LEASE	: WILLIAMS
WELL	: #1	TEST: 3	GEOLOGIST: TYLER SANDERS
ELEVATION	: 3328 K.B.	FORMATION	: KEYS
SECTION	: 17	TOWNSHIP	: 31S
RANGE	: 40W	STATE	: KS
GAUGE SN#	: 3849	RANGE	: 4200
		CLOCK	: 12

WELL INFORMATION

PERFORATION INTERVAL FROM:	5408.00 ft	TO:	5432.00 ft	TVD:	5432.0 ft
DEPTH OF SELECTIVE ZONE:				TEST TYPE:	GAS
DEPTH OF RECORDERS:	5420.0 ft		5423.0 ft		
TEMPERATURE:	131.0				
DRILL COLLAR LENGTH:	606.0 ft	I.D.:		2.250 in	
WEIGHT PIPE LENGTH :	0.0 ft	I.D.:		0.000 in	
DRILL PIPE LENGTH :	4774.0 ft	I.D.:		3.800 in	
TEST TOOL LENGTH :	28.0 ft	TOOL SIZE :		5.500 in	
ANCHOR LENGTH :	24.0 ft	ANCHOR SIZE:		5.500 in	
SURFACE CHOKE SIZE :	0.750 in	BOTTOM CHOKE SIZE:		0.750 in	
MAIN HOLE SIZE :	7.875 in	TOOL JOINT SIZE :		4.5XH	
PACKER DEPTH:	5403.0 ft	SIZE:		6.630 in	
PACKER DEPTH:	5408.0 ft	SIZE:		6.630 in	
PACKER DEPTH:	0.0 ft	SIZE:		0.000 in	
PACKER DEPTH:	0.0 ft	SIZE:		0.000 in	

MUD INFORMATION

DRILLING CON. :	TRANSPAC #2	VISCOSITY :	53.00 cp
MUD TYPE :	CHEMICAL	WATER LOSS:	9.600 cc
WEIGHT :	9.000 ppg		
CHLORIDES :	1500 ppm	SERIAL NUMBER:	402
JARS-MAKE :	WTC	REVERSED OUT?:	NO
DID WELL FLOW?:	NO		

COMMENTS

Comment

STRONG OFF BOTTOM OF BUCKET IN 1 MINUTE DECREASED
TO 8" IN BUCKET IN 60 MINUTES ON INITIAL FLOW
PERIOD. WEAK 2" BLOW BUILDING TO 7" BLOW IN

DST REPORT (CONTINUED)

COMMENTS (CONTINUED)

Comment

BUCKET IN 60 MINUTES ON FINAL FLOW PERIOD.
HAD PLUGGING AT END OF INITIAL FLOW PERIOD.

FLUID RECOVERY

Feet of Fluid	% Oil	% Gas	% Water	% Mud	Comments
30.0	0.0	0.0	0.0	100.0	MUD
0.0	0.0	0.0	0.0	0.0	670' OF GAS ABOVE FUID.

RATE INFORMATION

OIL VOLUME:	0.0000	STB		
GAS VOLUME:	0.0000	SCF		
MUD VOLUME:	0.1475	STB		
WATER VOLUME:	0.0000	STB		
TOTAL FLUID :	0.1475	STB		
			TOTAL FLOW TIME:	110.0000 min.
			AVERAGE OIL RATE:	0.0000 STB/D
			AVERAGE WATER RATE:	0.0000 STB/D

FIELD TIME & PRESSURE INFORMATION

INITIAL HYDROSTATIC PRESSURE: 2584.00

Description	Duration	p1	p End
INITIAL FLOW	60.00	29.00	36.00
INITIAL SHUT-IN	60.00		231.00
FINAL FLOW	60.00	36.00	40.00
FINAL SHUT-IN	60.00		168.00

FINAL HYDROSTATIC PRESSURE: 2527.00

DST REPORT (CONTINUED)

OFFICE TIME & PRESSURE INFORMATION

INITIAL HYDROSTATIC PRESSURE: 2639.00

Description	Duration	p1	p End
INITIAL FLOW	50.00	46.00	82.00
INITIAL SHUT-IN	69.00		244.00
FINAL FLOW	60.00	49.00	49.00
FINAL SHUT-IN	63.00		174.00

FINAL HYDROSTATIC PRESSURE: 2538.00

PRESSURE TRANSIENT REPORT

GENERAL INFORMATION

DATE : 1-21-94	TICKET : 19973
CUSTOMER : CHARTER PRODUCTION CO.	LEASE : WILLIAMS
WELL : #1 TEST: 3	GEOLOGIST: TYLER SANDERS
ELEVATION: 3328 K.B.	FORMATION: KEYS
SECTION : 17	TOWNSHIP : 31S
RANGE : 40W COUNTY: MORTON	STATE : KS
GAUGE SN#: 3849 RANGE : 4200	CLOCK : 12

INITIAL FLOW

Time (min)	Pressure	Delta P
0.00	46.00	46.00
5.00	46.00	0.00
10.00	46.00	0.00
15.00	46.00	0.00
20.00	46.00	0.00
25.00	46.00	0.00
30.00	49.00	3.00
35.00	60.00	11.00
40.00	70.00	10.00
45.00	81.00	11.00
50.00	82.00	1.00

INITIAL SHUT IN

Time (min)	Pressure	Delta P	Horner T
3.00	86.00	86.00	17.67
6.00	90.00	4.00	9.33
9.00	98.00	8.00	6.56
12.00	103.00	5.00	5.17
15.00	112.00	9.00	4.33
18.00	120.00	8.00	3.78
21.00	128.00	8.00	3.38
24.00	135.00	7.00	3.08
27.00	143.00	8.00	2.85
30.00	149.00	6.00	2.67
33.00	157.00	8.00	2.52
36.00	164.00	7.00	2.39
39.00	170.00	6.00	2.28
42.00	179.00	9.00	2.19
45.00	187.00	8.00	2.11

PRESSURE TRANSIENT REPORT (CONTINUED)

INITIAL SHUT IN (CONTINUED)

Time (min)	Pressure	Delta P	Horner T
48.00	195.00	8.00	2.04
51.00	202.00	7.00	1.98
54.00	208.00	6.00	1.93
57.00	217.00	9.00	1.88
60.00	223.00	6.00	1.83
63.00	232.00	9.00	1.79
66.00	240.00	8.00	1.76
69.00	244.00	4.00	1.72

FINAL FLOW

Time (min)	Pressure	Delta P
0.00	49.00	49.00
5.00	49.00	0.00
10.00	49.00	0.00
15.00	49.00	0.00
20.00	49.00	0.00
25.00	49.00	0.00
30.00	49.00	0.00
35.00	49.00	0.00
40.00	49.00	0.00
45.00	49.00	0.00
50.00	49.00	0.00
55.00	49.00	0.00
60.00	49.00	0.00

FINAL SHUT IN

Time (min)	Pressure	Delta P	Horner T
3.00	54.00	54.00	21.00
6.00	61.00	7.00	11.00
9.00	65.00	4.00	7.67
12.00	73.00	8.00	6.00
15.00	78.00	5.00	5.00
18.00	84.00	6.00	4.33
21.00	90.00	6.00	3.86
24.00	99.00	9.00	3.50
27.00	103.00	4.00	3.22

PRESSURE TRANSIENT REPORT (CONTINUED)

FINAL SHUT IN (CONTINUED)

<u>Time (min)</u>	<u>Pressure</u>	<u>Delta P</u>	<u>Horner T</u>
30.00	111.00	8.00	3.00
33.00	118.00	7.00	2.82
36.00	125.00	7.00	2.67
39.00	131.00	6.00	2.54
42.00	137.00	6.00	2.43
45.00	142.00	5.00	2.33
48.00	149.00	7.00	2.25
51.00	155.00	6.00	2.18
54.00	160.00	5.00	2.11
57.00	168.00	8.00	2.05
60.00	172.00	4.00	2.00
63.00	174.00	2.00	1.95

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