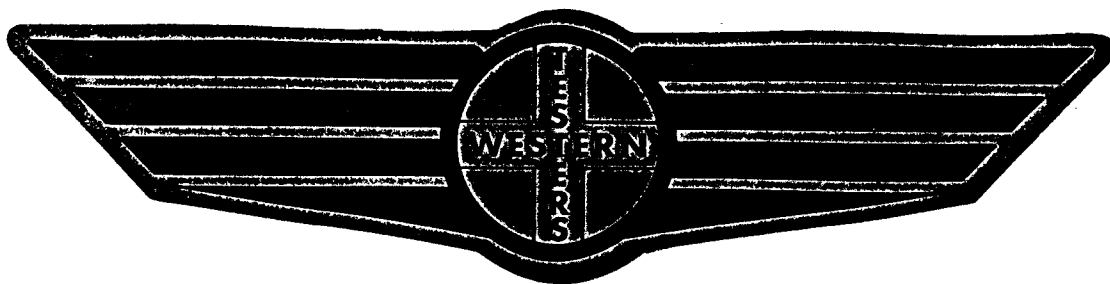


FORMATION TEST REPORT



Home Office:

Wichita, Kansas 67201

P.O. Box 1599

Phone 1 - 800-688-7021

COMPANY GRAVES DRILLING CO., INC. LEASE & WELL NO. YATES #3

SEC. 18 TWP. 31S RGE. 8W TEST NO. 1 DATE 5/21/92

DST REPORT

GENERAL INFORMATION

DATE	: 5/21/92	TICKET	: 18156
CUSTOMER	: GRAVES DRILLING CO., INC.	LEASE	: YATES
WELL	: 3	TEST:	1
ELEVATION:	1613 KB	GEOLOGIST:	DEAN PATTISSON
SECTION	: 18	FORMATION:	MISSISSIPPI
RANGE	: 8W	TOWNSHIP	: 31S
GAUGE SN#:	10270	STATE	: KS
	COUNTY: HARPER	CLOCK	: 12
	RANGE : 4150		

WELL INFORMATION

PERFORATION INTERVAL FROM:	4360.00 ft	TO:	4380.00 ft	TVD:	4380.0 ft
DEPTH OF SELECTIVE ZONE:				TEST TYPE:	GAS
DEPTH OF RECORDERS:	4372.0 ft		4375.0 ft		
TEMPERATURE:	122.0				
DRILL COLLAR LENGTH:	0.0 ft	I.D.:		0.000 in	
WEIGHT PIPE LENGTH :	300.0 ft	I.D.:		2.700 in	
DRILL PIPE LENGTH :	4040.0 ft	I.D.:		3.800 in	
TEST TOOL LENGTH :	20.0 ft	TOOL SIZE :		5.500 in	
ANCHOR LENGTH :	20.0 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:	4355.0 ft	SIZE:		6.630 in	
PACKER DEPTH:	4360.0 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. :	DUKE DRLG. RIG 2	VISCOSITY :	50.00 cp
MUD TYPE :	CHEMICAL	WATER LOSS:	9.600 cc
WEIGHT :	9.200 ppg		
CHLORIDES :	6000 ppm	SERIAL NUMBER:	
JARS-MAKE :		REVERSED OUT?:	NO
DID WELL FLOW?:	YES		

COMMENTS

Comment

INITIAL FLOW PERIOD STRONG BLOW, GAS TO SURFACE IN
12 MINUTES.
FINAL FLOW PERIOD GAS TO SURFACE. SEE FLOW CHART.

DST REPORT (CONTINUED)

COMMENTS (CONTINUED)

Comment

GEOLOGIST KEPT OUTSIDE CHART.

FLUID RECOVERY

Feet of Fluid	% Oil	% Gas	% Water	% Mud	Comments
90.0	3.0	11.0	35.0	51.0	OIL & GAS CUT WATERY MUD
120.0	2.0	12.0	68.0	18.0	OIL & GAS CUT MUDDY WATER
120.0	1.0	8.0	91.0	0.0	SLY OIL CUT WATER
0.0	0.0	0.0	0.0	0.0	CHLORIDES 65000 P.P.M.

RATE INFORMATION

OIL VOLUME: 0.0509 STB
 GAS VOLUME: 1.4766 SCF
 MUD VOLUME: 0.5842 STB
 WATER VOLUME: 1.6471 STB
 TOTAL FLUID : 2.2822 STB

TOTAL FLOW TIME: 90.0000 min.
 AVERAGE OIL RATE: 1.4285 STB/D
 AVERAGE WATER RATE: 35.0862 STB/D

FIELD TIME & PRESSURE INFORMATION

INITIAL HYDROSTATIC PRESSURE: 2181.00

Description	Duration	p1	p End
INITIAL FLOW	30.00	72.00	72.00
INITIAL SHUT-IN	60.00		946.00
FINAL FLOW	60.00	83.00	114.00
FINAL SHUT-IN	90.00		935.00

FINAL HYDROSTATIC PRESSURE: 2150.00

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 WICHITA, KS

DST REPORT (CONTINUED)

OFFICE TIME & PRESSURE INFORMATION

INITIAL HYDROSTATIC PRESSURE: 2223.00

Description	Duration	p1	p End
INITIAL FLOW	30.00	79.00	83.00
INITIAL SHUT-IN	60.00		964.00
FINAL FLOW	60.00	102.00	139.00
FINAL SHUT-IN	90.00		958.00

FINAL HYDROSTATIC PRESSURE: 2155.00

PRESSURE TRANSIENT REPORT

GENERAL INFORMATION

DATE : 5/21/92	TICKET : 18156
CUSTOMER : GRAVES DRILLING CO., INC.	LEASE : YATES
WELL : 3 TEST: 1	GEOLOGIST: DEAN PATTISSON
ELEVATION: 1613 KB	FORMATION: MISSISSIPPI
SECTION : 18	TOWNSHIP : 31S
RANGE : 8W COUNTY: HARPER	STATE : KS
GAUGE SN#: 10270 RANGE : 4150	CLOCK : 12

INITIAL FLOW

Time (min)	Pressure	Delta P
0.00	79.00	79.00
5.00	79.00	0.00
10.00	79.00	0.00
15.00	79.00	0.00
20.00	79.00	0.00
25.00	81.00	2.00
30.00	83.00	2.00

INITIAL SHUT IN

Time (min)	Pressure	Delta P	Horner T
3.00	292.00	292.00	0.00
6.00	544.00	252.00	0.00
9.00	674.00	130.00	0.00
12.00	748.00	74.00	0.00
15.00	801.00	53.00	0.00
18.00	833.00	32.00	0.00
21.00	862.00	29.00	0.00
24.00	880.00	18.00	0.00
27.00	899.00	19.00	0.00
30.00	908.00	9.00	0.00
33.00	919.00	11.00	0.00
36.00	926.00	7.00	0.00
39.00	934.00	8.00	0.00
42.00	939.00	5.00	0.00
45.00	942.00	3.00	0.00
48.00	946.00	4.00	0.00
51.00	949.00	3.00	0.00
54.00	954.00	5.00	0.00
57.00	959.00	5.00	0.00

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WICHITA, KS

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	964.00	5.00	0.00

FINAL FLOW

<u>Time (min)</u>	<u>Pressure</u>	<u>Delta P</u>
0.00	102.00	102.00
5.00	102.00	0.00
10.00	103.00	1.00
15.00	106.00	3.00
20.00	108.00	2.00
25.00	112.00	4.00
30.00	115.00	3.00
35.00	119.00	4.00
40.00	123.00	4.00
45.00	127.00	4.00
50.00	131.00	4.00
55.00	135.00	4.00
60.00	139.00	4.00

FINAL SHUT IN

<u>Time (min)</u>	<u>Pressure</u>	<u>Delta P</u>	<u>Horner T</u>
3.00	506.00	506.00	0.00
6.00	638.00	132.00	0.00
9.00	711.00	73.00	0.00
12.00	765.00	54.00	0.00
15.00	798.00	33.00	0.00
18.00	821.00	23.00	0.00
21.00	842.00	21.00	0.00
24.00	859.00	17.00	0.00
27.00	870.00	11.00	0.00
30.00	881.00	11.00	0.00
33.00	893.00	12.00	0.00
36.00	899.00	6.00	0.00
39.00	907.00	8.00	0.00
42.00	913.00	6.00	0.00
45.00	917.00	4.00	0.00
48.00	922.00	5.00	0.00

PRESSURE TRANSIENT REPORT (CONTINUED)

FINAL SHUT IN (CONTINUED)

<u>Time (min)</u>	<u>Pressure</u>	<u>Delta P</u>	<u>Horner T</u>
51.00	926.00	4.00	0.00
54.00	931.00	5.00	0.00
57.00	934.00	3.00	0.00
60.00	936.00	2.00	0.00
63.00	939.00	3.00	0.00
66.00	942.00	3.00	0.00
69.00	945.00	3.00	0.00
72.00	948.00	3.00	0.00
75.00	950.00	2.00	0.00
78.00	952.00	2.00	0.00
81.00	954.00	2.00	0.00
84.00	956.00	2.00	0.00
87.00	957.00	1.00	0.00
90.00	958.00	1.00	0.00

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WICHITA, KS

GAS FLOW REPORT

GENERAL INFORMATION

DATE : 5/21/92	TICKET : 18156
CUSTOMER : GRAVES DRILLING CO., INC.	LEASE : YATES
WELL : 3 TEST: 1	GEOLOGIST: DEAN PATTISSON
ELEVATION: 1613 KB	FORMATION: MISSISSIPPI
SECTION : 18	TOWNSHIP : 31S
RANGE : 8W COUNTY: HARPER	STATE : KS
GAUGE SN#: 10270 RANGE : 4150	CLOCK : 12

PRE FLOW

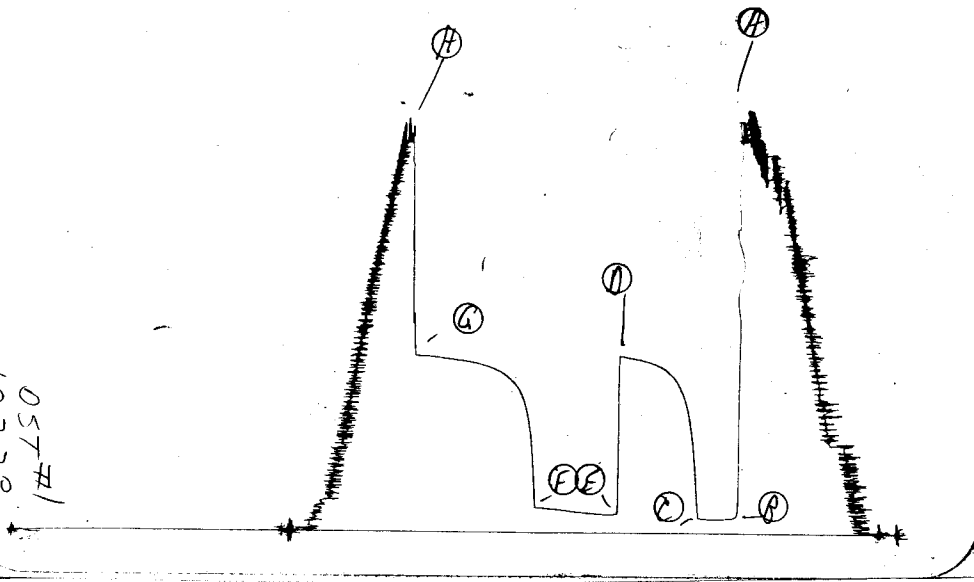
Time Guage (min)	Tester Type	Orifice Size	Pressure	Flow Desc.
12 MIN.	MERLA	0.500		GAS TO SURFACE
15 MIN.	MERLA	0.500	16"WTR	25100 SCF/D
20 MIN.	MERLA	0.500	26"WTR	31900 SCF/D
25 MIN.	MERLA	0.750	11"WTR	47200 SCF/D
30 MIN.	MERLA	0.750	9"WTR	42500 SCF/D

SECOND FLOW

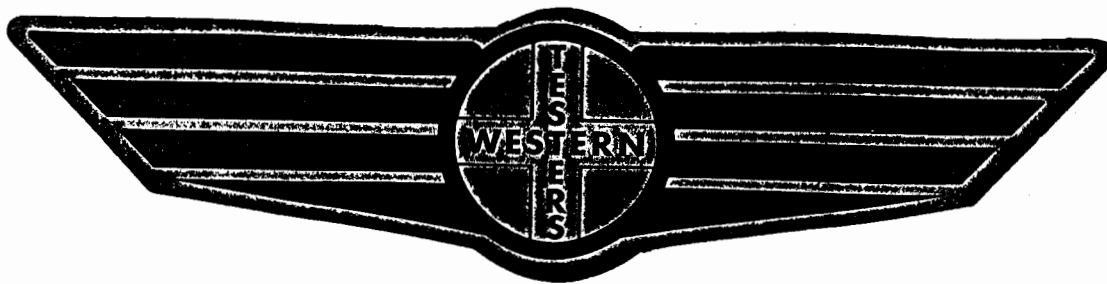
Time Guage (min)	Tester Type	Orifice Size	Pressure	Flow Desc.
10 MIN.	MERLA	0.750	17"WTR	58500 SCF/D
20 MIN.	MERLA	0.750	14"WTR	53300 SCF/D
30 MIN.	MERLA	0.750	10"WTR	44800 SCF/D
40 MIN.	MERLA	0.750	10"WTR	44800 SCF/D
50 MIN.	MERLA	0.750	10"WTR	44800 SCF/D
60 MIN.	MERLA	0.750	10"WTR	44800 SCF/D

7K4 18156

OST #1
10270



FORMATION TEST REPORT



Home Office:

Wichita, Kansas 67201

P.O. Box 1599

Phone 1 - 800-688-7021

COMPANY GRAVES DRILLING CO., INC. LEASE & WELL NO. YATES #3 SEC. 18 TWP. 31S RGE. 8W TEST NO. 2 DATE 5/22/92

DST REPORT

GENERAL INFORMATION

DATE	: 5/22/92	TICKET	: 18157
CUSTOMER	: GRAVES DRILLING CO. INC.	LEASE	: YATES
WELL	: 3	TEST: 2	GEOLOGIST: STUMP
ELEVATION	: 1613 KB	FORMATION	: MISSISSIPPI
SECTION	: 18	TOWNSHIP	: 31S
RANGE	: 8W	STATE	: KS
GAUGE SN#	: 10270	RANGE	: 4150
		CLOCK	: 12

WELL INFORMATION

PERFORATION INTERVAL FROM:	4385.00 ft	TO:	4425.00 ft	TVD:	4443.0 ft
DEPTH OF SELECTIVE ZONE:				TEST TYPE:	GAS
DEPTH OF RECORDERS:	4374.0 ft		4388.0 ft		
TEMPERATURE:	123.0				
DRILL COLLAR LENGTH:	0.0 ft	I.D.:		0.000 in	
WEIGHT PIPE LENGTH :	300.0 ft	I.D.:		2.700 in	
DRILL PIPE LENGTH :	4055.0 ft	I.D.:		3.800 in	
TEST TOOL LENGTH :	30.0 ft	TOOL SIZE :		5.500 in	
ANCHOR LENGTH :	40.0 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:	4380.0 ft	SIZE:		6.630 in	
PACKER DEPTH:	4385.0 ft	SIZE:		6.630 in	
PACKER DEPTH:	4425.0 ft	SIZE:		6.630 in	
PACKER DEPTH:	0.0 ft	SIZE:		0.000 in	

MUD INFORMATION

DRILLING CON. :	DUKE DRILLING RIG 2	VISCOSITY :	51.00 cp
MUD TYPE :	CHEMICAL	WATER LOSS:	12.000 cc
WEIGHT :	9.200 ppg		
CHLORIDES :	10000 ppm	SERIAL NUMBER:	
JARS-MAKE :		REVERSED OUT?:	NO
DID WELL FLOW?:	YES		

COMMENTS

Comment

INITIAL FLOW PERIOD STRONG BLOW, GAS TO SURFACE IN
17 MINUTES.
FINAL FLOW PERIOD GAS TO SURFACE. SEE FLOW CHART.

DST REPORT (CONTINUED)

COMMENTS (CONTINUED)

Comment

GEOLOGIST HAS OUTSIDE CHART.

FLUID RECOVERY

Feet of Fluid	% Oil	% Gas	% Water	% Mud	Comments
90.0	17.0	12.0	43.0	28.0	HVY OIL & GAS CUT MDY WTR
180.0	30.0	30.0	32.0	8.0	HVY OIL & GAS CUT MDY WTR
90.0	32.0	38.0	27.0	3.0	HVY OIL & GAS CUT MDY WTR
60.0	11.0	30.0	54.0	5.0	OIL & GAS CUT MUDDY WATER
330.0	0.0	0.0	100.0	0.0	WATER
0.0	0.0	0.0	0.0	0.0	CHLORIDES 98000 P.P.M.

RATE INFORMATION

OIL VOLUME:	1.4686 STB	TOTAL FLOW TIME:	90.0000 min.
GAS VOLUME:	9.2147 SCF	AVERAGE OIL RATE:	27.1056 STB/D
MUD VOLUME:	0.6354 STB	AVERAGE WATER RATE:	81.6164 STB/D
WATER VOLUME:	4.6912 STB		
TOTAL FLUID :	6.7951 STB		

FIELD TIME & PRESSURE INFORMATION

INITIAL HYDROSTATIC PRESSURE: 2139.00

Description	Duration	p1	p End
INITIAL FLOW	30.00	114.00	135.00
INITIAL SHUT-IN	60.00		925.00
FINAL FLOW	60.00	187.00	260.00
FINAL SHUT-IN	60.00		904.00

FINAL HYDROSTATIC PRESSURE: 2129.00

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WICHITA, KS

DST REPORT (CONTINUED)

OFFICE TIME & PRESSURE INFORMATION

INITIAL HYDROSTATIC PRESSURE: 2243.00

Description	Duration	p1	p End
INITIAL FLOW	30.00	139.00	153.00
INITIAL SHUT-IN	60.00		956.00
FINAL FLOW	60.00	200.00	292.00
FINAL SHUT-IN	60.00		927.00

FINAL HYDROSTATIC PRESSURE: 2166.00

PRESSURE TRANSIENT REPORT

GENERAL INFORMATION

DATE	: 5/22/92	TICKET	: 18157
CUSTOMER	: GRAVES DRILLING CO. INC.	LEASE	: YATES
WELL	: 3 TEST: 2	GEOLOGIST	: STUMP
ELEVATION	: 1613 KB	FORMATION	: MISSISSIPPI
SECTION	: 18	TOWNSHIP	: 31S
RANGE	: 8W COUNTY: HARPER	STATE	: KS
GAUGE SN#	: 10270 RANGE : 4150	CLOCK	: 12

INITIAL FLOW

Time (min)	Pressure	Delta P
0.00	139.00	139.00
5.00	140.00	1.00
10.00	141.00	1.00
15.00	142.00	1.00
20.00	145.00	3.00
25.00	149.00	4.00
30.00	153.00	4.00

INITIAL SHUT IN

Time (min)	Pressure	Delta P	Horner T
3.00	514.00	514.00	0.00
6.00	666.00	152.00	0.00
9.00	746.00	80.00	0.00
12.00	790.00	44.00	0.00
15.00	825.00	35.00	0.00
18.00	850.00	25.00	0.00
21.00	868.00	18.00	0.00
24.00	886.00	18.00	0.00
27.00	898.00	12.00	0.00
30.00	905.00	7.00	0.00
33.00	915.00	10.00	0.00
36.00	923.00	8.00	0.00
39.00	931.00	8.00	0.00
42.00	933.00	2.00	0.00
45.00	941.00	8.00	0.00
48.00	944.00	3.00	0.00
51.00	948.00	4.00	0.00
54.00	952.00	4.00	0.00
57.00	954.00	2.00	0.00

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WICHITA, KS

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	956.00	2.00	0.00

FINAL FLOW

<u>Time (min)</u>	<u>Pressure</u>	<u>Delta P</u>
0.00	200.00	200.00
5.00	200.00	0.00
10.00	200.00	0.00
15.00	212.00	12.00
20.00	222.00	10.00
25.00	234.00	12.00
30.00	244.00	10.00
35.00	254.00	10.00
40.00	263.00	9.00
45.00	270.00	7.00
50.00	278.00	8.00
55.00	287.00	9.00
60.00	292.00	5.00

FINAL SHUT IN

<u>Time (min)</u>	<u>Pressure</u>	<u>Delta P</u>	<u>Horner T</u>
3.00	546.00	546.00	0.00
6.00	684.00	138.00	0.00
9.00	745.00	61.00	0.00
12.00	778.00	33.00	0.00
15.00	804.00	26.00	0.00
18.00	823.00	19.00	0.00
21.00	837.00	14.00	0.00
24.00	852.00	15.00	0.00
27.00	863.00	11.00	0.00
30.00	872.00	9.00	0.00
33.00	880.00	8.00	0.00
36.00	886.00	6.00	0.00
39.00	892.00	6.00	0.00
42.00	900.00	8.00	0.00
45.00	907.00	7.00	0.00
48.00	911.00	4.00	0.00

PRESSURE TRANSIENT REPORT (CONTINUED)

FINAL SHUT IN (CONTINUED)

<u>Time (min)</u>	<u>Pressure</u>	<u>Delta P</u>	<u>Horner T</u>
51.00	915.00	4.00	0.00
54.00	919.00	4.00	0.00
57.00	924.00	5.00	0.00
60.00	927.00	3.00	0.00

RECEIVED
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CONSERVATION DIVISION
WICHITA, KS

GAS FLOW REPORT

GENERAL INFORMATION

DATE : 5/22/92	TICKET : 18157
CUSTOMER : GRAVES DRILLING CO. INC.	LEASE : YATES
WELL : 3 TEST: 2	GEOLOGIST: STUMP
ELEVATION: 1613 KB	FORMATION: MISSISSIPPI
SECTION : 18	TOWNSHIP : 31S
RANGE : 8W COUNTY: HARPER	STATE : KS
GAUGE SN#: 10270 RANGE : 4150	CLOCK : 12

PRE FLOW

Time Guage (min)	Tester Type	Orifice Size	Pressure	Flow Desc.
17 MIN.	MERLA	0.500		
20 MIN.	MERLA	0.500	14"WTR	GAS TO SURFACE 23700 SCF/D

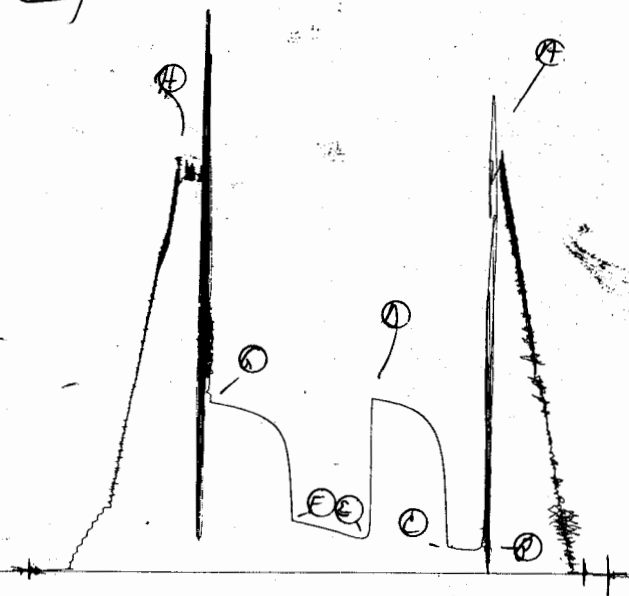
SECOND FLOW

Time Guage (min)	Tester Type	Orifice Size	Pressure	Flow Desc.
10 MIN.	MERLA	0.500	20"WTR	28000 SCF/D
20 MIN.	MERLA	0.500	13"WTR	22800 SCF/D
30 MIN.	MERLA	0.500	15"WTR	24500 SCF/D
40 MIN.	MERLA	0.500	15"WTR	24500 SCF/D
50 MIN.	MERLA	0.500	15"WTR	24500 SCF/D
60 MIN.	MERLA	0.500	15"WTR	24500 SCF/D

JK 18157

I

OST# 2
10270



JK 18157

Below Staddle

OST# 2
13401

