

STATE CORPORATION COMMISSION OF KANSAS
OIL & GAS CONSERVATION DIVISION
WELL COMPLETION FORM
ACD-1 WELL HISTORY
DESCRIPTION OF WELL AND LEASE

RWD 05-10-99

Operator: License # 32283
Name: WESTERN OPERATING COMPANY
Address 518 17TH STREET, SUITE 1680
DENVER, CO 80202
City/State/Zip
Purchaser:
Operator Contact Person: STEVEN D. JAMES
Phone (303), 893-2438
Contractor: Name: MURFIN DRILLING COMPANY
License: 30606
Wellsite Geologist: PETER DEBENHAM

Designate Type of Completion
 New Well Re-Entry Workover
 Oil SWD SLOW Temp. Abd.
 Gas ENHR SIGW
 Dry Other (Core, WSW, Expl., Cathodic, etc)

If Workover:
Operator:
Well Name:
Comp. Date 11/18/98 Old Total Depth 11/28/98
 Deepening Re-perf. Conv. to Inj/SWD
 Plug Back PBSD
 Commingled Docket No.
 Dual Completion Docket No.
 Other (SWD or Inj?) Docket No.
11/18/98 11/28/98 04/09/99
Spud Date Date Reached TD Completion Date

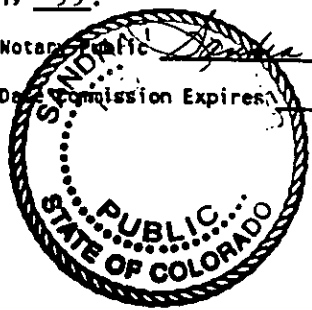
API NO. 15- 071-206960000
County GREELEY
1,550' Feet from S(N) (circle one) Line of Section
330' Feet from E(N) (circle one) Line of Section
Footages Calculated from Nearest Outside Section Corner:
NE, SE, (NW) or SW (circle one)
Lease Name DANIELLE Well # 14-1
Field Name NO MAN'S
Producing Formation MORROW
Elevation: Ground 3,745' KB 3,755'
Total Depth 5,315 PBSD
Amount of Surface Pipe Set and Cemented at 535 Feet
Multiple Stage Cementing Collar Used? Yes No
If yes, show depth set 2,445 Feet
If Alternate II completion, cement circulated from _____
feet depth to _____ w/ _____ sx cmt.

Drilling Fluid Management Plan P4A-10-1-99 U.C.
(Data must be collected from the Reserve Pit)
Chloride content 5,000 ppm Fluid volume 2,000 bbls
Dewatering method used EVAPORATION
Location of fluid disposal if hauled offsite:
Operator Name WESTERN OPERATING COMPANY
Lease Name DANIELLE License No. _____
NW Quarter Sec. 14 Twp. 20 S Rng. 42 E(N)
County GREELEY Docket No. _____

INSTRUCTIONS: An original and two copies of this form shall be filed with the Kansas Corporation Commission, 130 S. Market - Room 2078, Wichita, Kansas 67202, within 120 days of the spud date, recompletion, workover or conversion of a well. Rule 82-3-130, 82-3-106 and 82-3-107 apply. Information on side two of this form will be held confidential for a period of 12 months if requested in writing and submitted with the form (see rule 82-3-107 for confidentiality in excess of 12 months). One copy of all wireline logs and geologist well report shall be attached with this form. ALL CEMENTING TICKETS MUST BE ATTACHED. Submit CP-4 form with all plugged wells. Submit CP-111 form with all temporarily abandoned wells.

All requirements of the statutes, rules and regulations promulgated to regulate the oil and gas industry have been fully complied with and the statements herein are complete and correct to the best of my knowledge.

Signature *Steven D. James* STEVEN D. JAMES
Title VICE PRESIDENT Date 05/06/99
Subscribed and sworn to before me this 6TH day of MAY, 19 99.
Notary Public *Sandra L. Croster* SANDRA L. CROSTER
Notary Commission Expires 10/26/2000



K.C.C. OFFICE USE ONLY
F Letter of Confidentiality Attached
C Wireline Log Received
C Geologist Report Received
Distribution
 KCC SWD/Rep NGPA
 KGS Plug Other (Specify)

ORIGINAL

SIDE TWO

Operator Name WESTERN OPERATING COMPANY Lease Name DANIELLE Well # 14-2
 Sec. 14 Twp. 20S Rge. 42 East County GREELEY
 West

INSTRUCTIONS: Show important tops and base of formations penetrated. Detail all cores. Report all drill stem tests giving interval tested, time tool open and closed, flowing and shut-in pressures, whether shut-in pressure reached static level, hydrostatic pressures, bottom hole temperature, fluid recovery, and flow rates if gas to surface during test. Attach extra sheet if more space is needed. Attach copy of log.

Drill Stem Tests Taken Yes No
 (Attach Additional Sheets.)
 Samples Sent to Geological Survey Yes No
 Cores Taken Yes No
 Electric Log Run Yes No
 (Submit Copy.)
 List All E.Logs Run:
 ARRAY INDUCTION
 COMPENSATED NEUTRON/DENSITY

Log Formation (Top), Depth and Datum Sample

Name	Top	Datum
BASE STONE CORRAL	2444'	+1311
ADMIRE	3397'	+ 358
SHAWNEE	3730'	+ 25
LANSING	4023'	- 268
MARMATON	4448'	- 693
MORROW	5052'	-1297
MISS	5294'	-1539

CASING RECORD New Used
 Report all strings set-conductor, surface, intermediate, production, etc.

Purpose of String	Size Hole Drilled	Size Casing Set (In O.D.)	Weight Lbs./Ft.	Setting Depth	Type of Cement	# Sacks Used	Type and Percent Additives
SURFACE CASING	17.5"	13 3/8"	48#	535'	CLASS C	375	3%CC, 2% GEL
PRODUCTION	7 7/8"	4 1/2"	11/6#	2980'	ASC CEMENT	200	10% SALT

ADDITIONAL CEMENTING/SQUEEZE RECORD

Purpose:	Depth Top Bottom	Type of Cement	#Sacks Used	Type and Percent Additives
<input type="checkbox"/> Perforate				
<input type="checkbox"/> Protect Casing				
<input type="checkbox"/> Plug Back TD				
<input type="checkbox"/> Plug Off Zone				

Shots Per Foot	PERFORATION RECORD - Bridge Plugs Set/Type Specify Footage of Each Interval Perforated	Acid, Fracture, Shot, Cement Squeeze Record (Amount and Kind of Material Used)	Depth
4.25	2837 - 2888 12 HOLES	1000 GAL 7 1/2% HCL ACID	
		300 GAL A-GEL, 80 SX	
		20/40 SAND	

TUBING RECORD Size Set At Packer At Liner Run Yes No

Date of First, Resumed Production, SWD or Inj. D&A Producing Method Flowing Pumping Gas Lift Other (Explain)

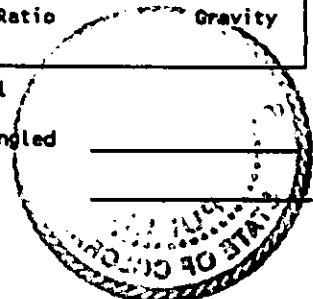
Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio	Gravity
	<u>N-A</u>				

Disposition of Gas: Vented Sold Used on Lease (If vented, submit ACO-18.)

METHOD OF COMPLETION Open Hole Perf. Dually Comp. Commingled Other (Specify) MAINTENANCE

Production Interval _____

CONSERVATION DIVISION
Wichita, Kansas



ALLIED CEMENTING CO., INC.

P.O. BOX 31
 SUSSELL, KS 67865
 PH (785) 483-3307
 FAX (785) 483-6568

INVOICE ORIGINAL

Invoice Number: 078558

Invoice Date: 11/25/98

Sold Western Operating
 To: 518 17th, #1180
 Denver, CO
 80202

Cust I.D.....: WestOp
 P.O. Number...: Danielle #14-1
 P.O. Date.....: 11/25/98

Due Date.: 12/25/98
 Terms..... Net 30

Item I.D./Desc.	Qty. Used	Unit	Price	Net	TAX
Common	375.00	SKS	7.5500	2831.25	E
Cel	7.00	SKS	9.5000	66.50	E
Chloride	13.00	SKS	28.0000	364.00	E
Handling	375.00	SKS	1.0500	393.75	E
Mileage (93)	93.00	MILE	15.0000	1470.00	E
375 sks @\$.04 per sk per mi					
Tot Pipe	1.00	JOB	470.0000	470.00	E
Extra Footage	235.00	PER	0.4300	101.05	E
Mileage pmp_trk	98.00	MILE	2.8500	279.30	E
Rubber plug	1.00	EACH	210.0000	210.00	E

All Prices Are Net, Payable 30 Days Following
 Date of Invoice. 1 1/2% Charged Thereafter.
 If Account CURRENT take Discount of \$ 922.88
 ONLY if paid within 30 days from Invoice Date

Subtotal:	6185.85
Tax.....:	0.00
Payments:	0.00
Total....:	6185.85

RECEIVED
 STATE COMMISSION

NOV 29 1998

COMMUNICATIONS DIVISION

5092
 1498
 12/18/98

contractor to do work as is listed. The above work was
 done to satisfaction and supervision of owner agent or

TAX _____

ALLIED CEMENTING CO., INC.

P.O. BOX 31
 RUSSELL, KS 67668
 PH (785) 483-3397
 FAX (785) 483-5688

INVOICE ORIGINAL

Invoice Number: 073503

Invoice Date: 11/30/98

Sold Western Operating
 To: 518 17th, #1180
 Denver, CO
 80202

Cust I.D.: WestOp
 P.O. Number.: Danielle 14-1
 P.O. Date....: 11/30/98

Due Date.: 12/30/98
 Terms....: Net 30

Item I.D./Desc.	Qty. Used	Unit	Price	Net	PK
ASC	200.00	SKS	9.0500	1810.00	E
Salt	23.00	SKS	7.0000	161.00	E
ASF	500.00	CAL	1.0000	500.00	E
Handling	200.00	SKS	1.0500	210.00	E
Mileage (98)	98.00	MILE	8.0000	784.00	E
200 sks \$3.04 per sk per mi					
Production Casing	1.00	JOB	1080.0000	1080.00	E
Mileage pump trk	98.00	MILE	2.8500	279.30	E
Rubber plug	1.00	EACH	38.0000	38.00	E
Guide Shoe	1.00	EACH	90.0000	90.00	E
AFU Insert	1.00	EACH	150.0000	150.00	E
Centralizers	6.00	EACH	25.0000	150.00	E
Cement Basket	2.00	EACH	129.0000	258.00	E
Port Collar	1.00	EACH	2340.0000	2340.00	E

All Prices Are Net, Payable 30 Days Following
 Date of Invoice. 1 1/2% Charged Thereafter.
 If Account CURRENT take Discount of \$ 1172.55
 ONLY if paid within 30 days from Invoice Date

Subtotal: 7850.30
 Tax: 0.00
 Payments: 0.00
 Total: 7850.30

STATE COMMISSION

11/30/98
 10/15/98
 11/30/98
 11/30/98

ORIGINAL

Well Name: Danielle 14-1
Company: Western Operating Company 15-071-20696-00-00
Location: 14-20s-42w
Greeley County Kansas
Date: 11-30-98

ORIGINAL

TRILOBITE TESTING L.L.C.

OPERATOR : Western Oper. Co.
WELL NAME: Danielle 14-1
LOCATION : 14-20s-42w Greeley co KS
INTERVAL : 2822.00 To 2860.00 ft

DATE 11-22-98
KB 3755.00 ft TICKET NO: 11636 DST #1
GR 3745.00 ft FORMATION: chase
TD 2860.00 ft TEST TYPE: CONV.

RECORDER DATA

Mins	Field	1	2	3	4
PF 15 Rec.	11058	11058	2347		
SI 30 Range (Psi)	4500.0	4500.0	4995.0	0.0	0.0
SF 60 Clock (hrs)	12	12	alpin		
FS 90 Depth (ft)	2855.0	2855.0	2823.0	0.0	0.0
	Field	1	2	3	4
Init Hydro	1509.0	1543.0	1522.0	0.0	0.0
First Flow	55.0	64.0	28.0	0.0	0.0
B1. Final Flow	55.0	64.0	35.0	0.0	0.0
In Shut-in	567.0	575.0	587.0	0.0	0.0
Init Flow	66.0	83.0	40.0	0.0	0.0
E. Final Flow	66.0	83.0	61.0	0.0	0.0
F. Fl Shut-in	601.0	610.0	605.0	0.0	0.0
Final Hydro	1487.0	1425.0	1361.0	0.0	0.0
Inside/Outside	i	i	o		

TIME DATA-----
PF Fr. 1448 to 1503 hr
IS Fr. 1503 to 1533 hr
SF Fr. 1533 to 1633 hr
FS Fr. 1633 to 1803 hr

T STARTED 1225 hr
T QN BOTM 1444 hr
T OPEN 1448 hr
T PULLED 1803 hr
T OUT 2000 hr

TOOL DATA-----
Tool Wt. 4000.00 lb
Wt Set On Packer 26000.00 lb
Wt Pulled Loose 90000.00 lb
Initial Str Wt 68000.00 lb
Unseated Str Wt 69000.00 lb
Bot Choke 0.75 in
Hole Size 7.88 in
D Col. ID 2.25 in
D. Pipe ID 3.50 in
D.C. Length 560.00 ft
D.P. Length 2249.00 ft

RECOVERY

60.00 ft Fluid 60.00 ft of 60.00 ft in DC and 0.00 ft in DP
0.00 ft of drilling mud 100% mud
0.00 ft of
0.00 ft of
0.00 ft of
0.00 ft of
0.00 ft of
0.00 ft of
0.00 ft of

ALINITY 0.00 P.P.M. A.P.I. Gravity 0.00

BLOW DESCRIPTION

Initial Flow:
1/4" at open built to 2 1/2"
Initial Shut-in:
No return
Final Flow:
1/4" at open built to 1 1/2" died
back to 1/2"
Final Shut-in:
No return

MUD DATA-----
Mud Type Chemical
Weight 9.70 lb/c
Vis. 34.00 S/L
W.L. 0.00 in3
F.C. 0.00 in
Mud Drop N

Amt. of fill 0.00 ft
Btm. H. Temp. 93.00 F
Hole Condition good
% Porosity 0.00
Packer Size 6.75 in
No. of Packers 2
Cushion Amt. 0.00
Cushion Type
Reversed Out N
Tool Chased N
Tester Shane McBride
Co. Rep. Pete
Contr. Murfin
Rig # 25
Unit #
Pump T.

Test Successful: Y

*** TOOL DIAGRAM *** CONV.

WELL NAME: Danielle 14-1

LOCATION : 14-20-42

TICKET No. 11636 D.S.T. No. 1 DATE 11-22-98

TOTAL TOOL TO BOTTOM OF TOP PACKERS 30

INTERVAL TOOL

BOTTOM PACKERS AND ANCHOR 38

TOTAL TOOL 68

DRILL COLLAR ANCHOR IN INTERVAL

C. ANCHOR STND.	Stands	Single	Total
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D.P. ANCHOR STND.	Stands	Single	Total
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TOTAL ASSEMBLY 68

C. ABOVE TOOLS.	Stands	6	Single	Total	560
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D.P. ABOVE TOOLS.	Stands	18	Single	Total	2249
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TOTAL DRILL COLLARS DRILL PIPE & TOOLS .. 2877

TOTAL DEPTH 2860

TOTAL DRILL PIPE ABOVE K.B. 17

REMARKS:

GAS;

IL;

WATER;

UD; 4,000 ml.

TOTAL; 4,000 ml.

Pressure 360 psi.

lorides in sampler 96,000

P.O. SUB	
C.O. SUB 1'	2791
S.I. TOOL 5'	2797
sampler 3'	2800
HMV 5'	2805
JARS 5'	2810
SAFETY JOINT 2'	2812
PACKER top	2817
PACKER bottom	2822
DEPTH 2822	
STUBB 1'	2823
ANCHOR alpine recorder	2823
32' perf	2855
ak-1 recorder	2855
T.C.	
DEPTH	
BULLNOSE 5' bullplug	2860
T.D.	2860

Flag Points

	t (Min.)	P (PSig)
A:	0.00	1522.33
B:	0.00	28.18
C:	14.50	35.21
D:	30.50	587.28
E:	0.00	40.48
F:	59.00	61.71
G:	89.50	605.67
Q:	0.00	1361.08

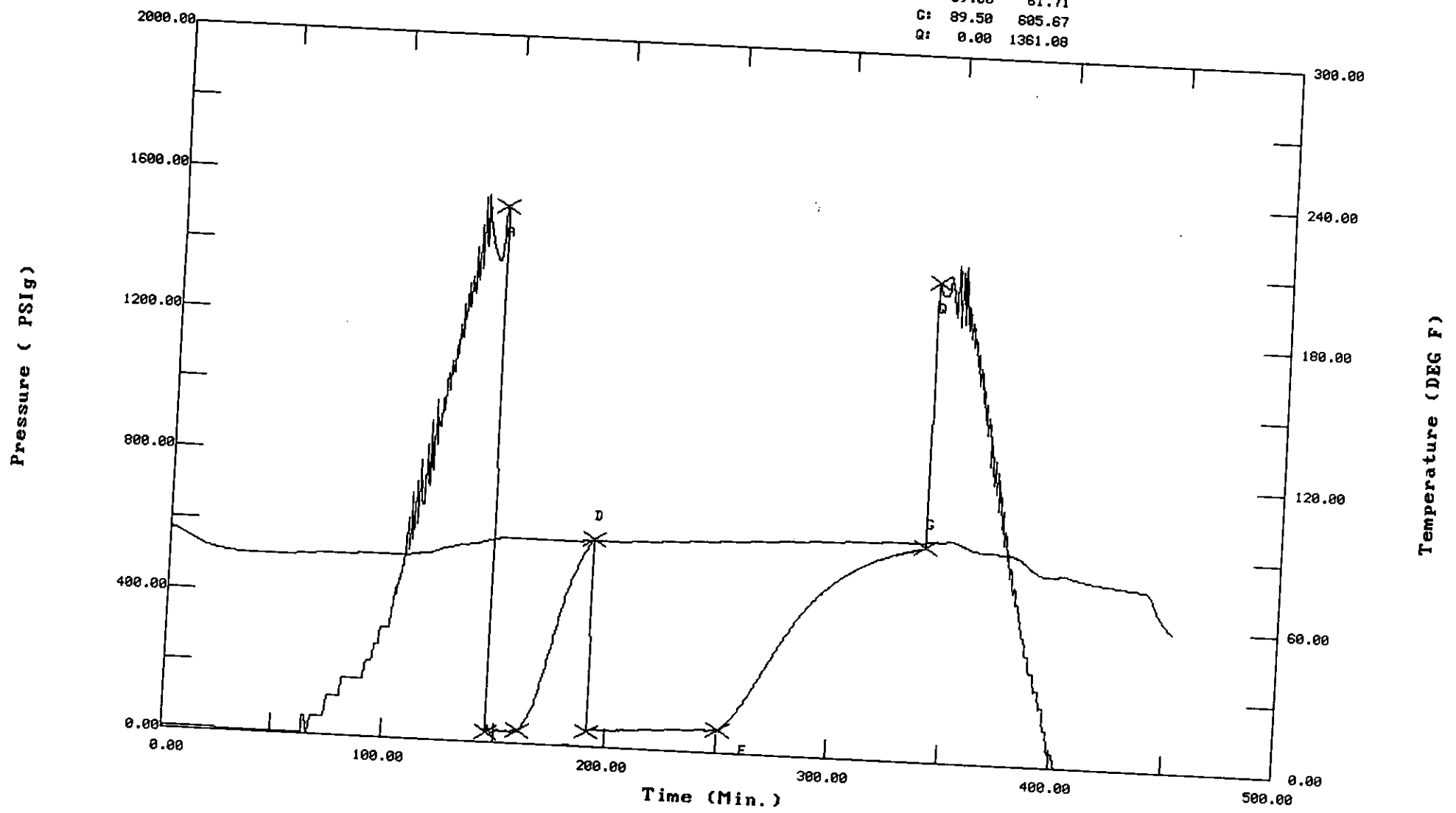
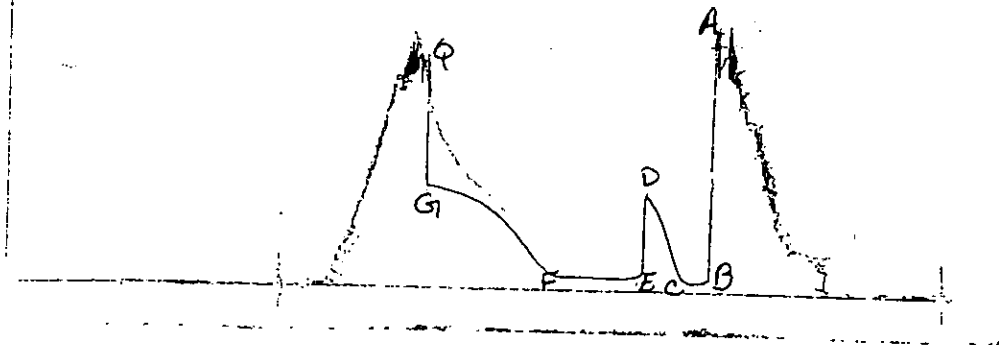


CHART PAGE

11058 #1

X



This is a photocopy of the actual AK-1 recorder chart

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 11636 DST #1 Danielle 14-1 Western Oper. Co.
 DATE: 11/22/98 TIME: 12:22:27

	Time	Pressure PSIg	delta P PSIg	Temp. DEG F	(T+dT)/dT	P ² /10 ⁶
***** Initial Hydro.	145.00	1522.3	0.0	85.72		
***** Start Flow 1	0.00	28.2	0.0	86.06		
	0.50	39.1	10.9	86.18		
	1.00	48.0	19.8	86.30		
	1.50	32.4	4.2	86.41		
	2.00	25.5	-2.7	86.51		
	2.50	23.7	-4.4	86.60		
	3.00	25.5	-2.7	86.68		
	3.50	28.6	0.4	86.74		
	4.00	28.8	0.6	86.80		
	4.50	29.7	1.5	86.86		
	5.00	32.7	4.5	86.90		
	5.50	32.5	4.3	86.94		
	6.00	31.0	2.8	86.97		
	6.50	31.8	3.6	86.99		
	7.00	32.1	3.9	87.02		
	7.50	32.0	3.8	87.03		
	8.00	32.1	3.9	87.04		
	8.50	32.2	4.0	87.06		
	9.00	32.8	4.6	87.07		
	9.50	32.4	4.2	87.08		
	10.00	30.2	2.0	87.08		
	10.50	30.7	2.5	87.08		
	11.00	31.9	3.7	87.09		
	11.50	32.5	4.3	87.08		
	12.00	32.8	4.6	87.08		
	12.50	33.1	4.9	87.07		
	13.00	33.5	5.3	87.07		
	13.50	34.6	6.4	87.07		
	14.00	35.1	6.9	87.05		
***** End Flow 1	14.50	35.2	7.0	87.05		
***** Start Shutin 1	0.00	35.2	0.0	87.05	0.0000	0.001
	0.50	39.3	4.1	87.04	30.0000	0.002
	1.00	44.3	9.1	87.03	15.5000	0.002
	1.50	49.3	14.1	87.03	10.6667	0.002
	2.00	54.5	19.2	87.03	8.2500	0.003
	2.50	59.7	24.5	87.02	6.8000	0.004
	3.00	65.2	30.0	87.01	5.8333	0.004
	3.50	71.0	35.8	87.01	5.1429	0.005
	4.00	77.2	42.0	87.00	4.6250	0.006
	4.50	84.0	48.8	86.99	4.2222	0.007
	5.00	91.2	56.0	86.99	3.9000	0.008
	5.50	99.1	63.9	86.98	3.6364	0.01
	6.00	107.5	72.2	86.98	3.4167	0.012
	6.50	116.4	81.2	86.98	3.2308	0.014
	7.00	125.9	90.7	86.97	3.0714	0.016
	7.50	136.1	100.9	86.97	2.9333	0.019
	8.00	146.9	111.7	86.96	2.8125	0.022
	8.50	158.2	123.0	86.96	2.7059	0.025
	9.00	170.0	134.8	86.96	2.6111	0.029
	9.50	182.4	147.2	86.96	2.5263	0.033

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING
 TEST: 11636 DST #1 Danielle 14-1 Western Oper. Co.
 DATE: 11/22/98 TIME: 12:22:27

Time	Pressure PSig	delta P PSig	Temp. DEG F	(T+dT)/dT	P ² /10 ⁶
10.00	195.3	160.1	86.95	2.4500	0.038
10.50	208.6	173.4	86.96	2.3810	0.044
11.00	222.1	186.9	86.96	2.3182	0.049
11.50	235.9	200.7	86.96	2.2609	0.056
12.00	249.9	214.7	86.96	2.2083	0.062
12.50	263.9	228.7	86.97	2.1600	0.070
13.00	277.9	242.7	86.96	2.1154	0.077
13.50	291.9	256.7	86.97	2.0741	0.085
14.00	305.6	270.4	86.98	2.0357	0.093
14.50	319.2	284.0	86.99	2.0000	0.102
15.00	332.7	297.5	86.99	1.9667	0.111
15.50	345.9	310.7	86.99	1.9355	0.120
16.00	359.0	323.8	86.97	1.9062	0.129
16.50	371.7	336.5	87.00	1.8788	0.138
17.00	384.0	348.8	87.01	1.8529	0.147
17.50	396.0	360.8	87.02	1.8286	0.157
18.00	407.7	372.5	87.02	1.8056	0.166
18.50	419.0	383.8	87.03	1.7838	0.176
19.00	429.9	394.7	87.04	1.7632	0.185
19.50	440.5	405.3	87.05	1.7436	0.194
20.00	450.6	415.4	87.07	1.7250	0.203
20.50	460.5	425.2	87.07	1.7073	0.212
21.00	469.8	434.6	87.08	1.6905	0.221
21.50	478.9	443.7	87.09	1.6744	0.229
22.00	487.7	452.5	87.09	1.6591	0.238
22.50	495.9	460.7	87.12	1.6444	0.246
23.00	504.0	468.8	87.13	1.6304	0.254
23.50	511.7	476.4	87.13	1.6170	0.262
24.00	519.0	483.8	87.14	1.6042	0.269
24.50	526.0	490.8	87.16	1.5918	0.277
25.00	532.8	497.6	87.17	1.5800	0.284
25.50	539.2	504.0	87.19	1.5686	0.291
26.00	545.5	510.3	87.20	1.5577	0.298
26.50	551.4	516.2	87.21	1.5472	0.304
27.00	557.1	521.9	87.23	1.5370	0.310
27.50	562.6	527.4	87.24	1.5273	0.317
28.00	567.7	532.5	87.26	1.5179	0.322
28.50	572.8	537.6	87.26	1.5088	0.328
29.00	577.6	542.4	87.28	1.5000	0.334
29.50	582.2	547.0	87.30	1.4915	0.339
30.00	586.6	551.4	87.31	1.4833	0.344
30.50	587.3	552.1	87.32	1.4754	0.345
0.00	40.5	0.0	87.34		
0.50	43.6	3.2	87.34		
1.00	46.3	5.8	87.35		
1.50	46.6	6.1	87.36		
2.00	46.1	5.6	87.37		
2.50	46.5	6.0	87.38		
3.00	44.7	4.2	87.39		
3.50	45.0	4.5	87.40		
4.00	45.9	5.4	87.41		

***** End Shut-in 1

***** Start Flow 2

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 11636 DST #1 Danielle 14-1 Western Oper. Co.

DATE: 11/22/98 TIME: 12:22:27

Time	Pressure PSIg	delta P PSIg	Temp. DEG F	(T+dT)/dT	P ² /10 ⁶
4.50	46.6	6.1	87.41		
5.00	47.0	6.5	87.42		
5.50	47.5	7.0	87.43		
6.00	47.5	7.0	87.44		
6.50	47.4	6.9	87.46		
7.00	47.7	7.2	87.47		
7.50	48.3	7.9	87.48		
8.00	47.0	6.5	87.49		
8.50	46.9	6.4	87.50		
9.00	47.4	6.9	87.52		
9.50	46.9	6.4	87.53		
10.00	47.8	7.4	87.55		
10.50	47.9	7.5	87.56		
11.00	48.2	7.7	87.58		
11.50	47.2	6.7	87.60		
12.00	47.1	6.6	87.61		
12.50	47.5	7.0	87.63		
13.00	48.1	7.6	87.65		
13.50	47.4	6.9	87.66		
14.00	48.6	8.1	87.69		
14.50	48.3	7.8	87.70		
15.00	49.6	9.2	87.72		
15.50	50.3	9.8	87.74		
16.00	48.9	8.5	87.75		
16.50	50.3	9.8	87.78		
17.00	51.5	11.1	87.80		
17.50	50.3	9.8	87.81		
18.00	51.5	11.1	87.84		
18.50	52.1	11.7	87.85		
19.00	51.2	10.7	87.88		
19.50	49.4	8.9	87.90		
20.00	50.4	9.9	87.93		
20.50	51.6	11.1	87.94		
21.00	52.0	11.5	87.97		
21.50	51.6	11.2	87.99		
22.00	51.6	11.1	88.01		
22.50	51.5	11.0	88.03		
23.00	51.9	11.4	88.06		
23.50	51.5	11.0	88.07		
24.00	52.5	12.0	88.10		
24.50	52.5	12.0	88.12		
25.00	52.8	12.3	88.15		
25.50	53.2	12.7	88.17		
26.00	53.1	12.7	88.19		
26.50	53.9	13.4	88.22		
27.00	54.5	14.1	88.24		
27.50	55.4	14.9	88.27		
28.00	55.6	15.1	88.29		
28.50	55.0	14.5	88.31		
29.00	54.3	13.8	88.34		
29.50	54.9	14.5	88.37		

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING
 TEST: 11636 DST #1 Danielle 14-1 Western Oper. Co.
 DATE: 11/22/98 TIME: 12:22:27

Time	Pressure PSig	delta P PSig	Temp. DEG F	(T+dT)/dT	P ² /10 ⁶
30.00	56.1	15.6	88.38		
30.50	56.3	15.8	88.41		
31.00	55.1	14.6	88.43		
31.50	53.3	12.8	88.46		
32.00	54.2	13.7	88.48		
32.50	54.7	14.2	88.50		
33.00	55.5	15.1	88.53		
33.50	55.8	15.3	88.55		
34.00	55.6	15.2	88.57		
34.50	55.6	15.1	88.60		
35.00	56.2	15.8	88.63		
35.50	56.6	16.1	88.65		
36.00	56.7	16.3	88.67		
36.50	56.8	16.3	88.70		
37.00	56.7	16.2	88.72		
37.50	56.6	16.2	88.74		
38.00	56.7	16.2	88.76		
38.50	56.8	16.4	88.79		
39.00	57.1	16.6	88.81		
39.50	57.0	16.5	88.83		
40.00	57.2	16.7	88.86		
40.50	57.7	17.2	88.88		
41.00	58.1	17.6	88.91		
41.50	58.2	17.7	88.93		
42.00	58.2	17.8	88.96		
42.50	58.3	17.9	88.98		
43.00	58.5	18.1	89.00		
43.50	58.7	18.3	89.03		
44.00	58.9	18.4	89.05		
44.50	59.1	18.7	89.07		
45.00	59.4	18.9	89.10		
45.50	59.6	19.1	89.12		
46.00	59.8	19.3	89.15		
46.50	60.0	19.5	89.16		
47.00	60.0	19.5	89.19		
47.50	60.3	19.8	89.21		
48.00	60.4	19.9	89.24		
48.50	60.7	20.2	89.27		
49.00	60.7	20.2	89.28		
49.50	60.8	20.4	89.30		
50.00	61.0	20.5	89.33		
50.50	61.2	20.7	89.35		
51.00	61.4	20.9	89.38		
51.50	61.4	21.0	89.41		
52.00	60.9	20.4	89.44		
52.50	60.7	20.3	89.47		
53.00	60.7	20.2	89.48		
53.50	60.1	19.7	89.48		
54.00	60.1	19.6	89.49		
54.50	60.4	19.9	89.49		
55.00	60.5	20.1	89.52		

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING
 TEST: 11636 DST #1 Danielle 14-1 Western Oper. Co.
 DATE: 11/22/98 TIME: 12:22:27

Time	Pressure PSIg	delta P PSIg	Temp. DEG F	(T+dT)/dT	P ² /10 ⁶
55.50	60.7	20.2	89.55		
56.00	60.9	20.4	89.58		
56.50	60.9	20.4	89.61		
57.00	61.0	20.6	89.63		
57.50	61.2	20.7	89.65		
58.00	61.5	21.0	89.67		
58.50	61.6	21.1	89.70		
59.00	61.7	21.2	89.72		
0.00	61.7	0.0	89.72	0.0000	0.004
0.50	64.2	2.5	89.74	148.0000	0.004
1.00	67.5	5.8	89.76	74.5000	0.005
1.50	70.7	9.0	89.79	50.0000	0.005
2.00	74.0	12.3	89.81	37.7500	0.005
2.50	77.4	15.7	89.83	30.4000	0.006
3.00	80.9	19.2	89.86	25.5000	0.007
3.50	84.4	22.7	89.88	22.0000	0.007
4.00	88.0	26.3	89.91	19.3750	0.008
4.50	91.7	30.0	89.92	17.3333	0.008
5.00	95.4	33.7	89.94	15.7000	0.009
5.50	99.3	37.6	89.96	14.3636	0.01
6.00	103.3	41.6	89.99	13.2500	0.011
6.50	107.4	45.7	90.02	12.3077	0.012
7.00	111.7	49.9	90.04	11.5000	0.012
7.50	116.0	54.3	90.06	10.8000	0.013
8.00	120.3	58.6	90.08	10.1875	0.014
8.50	125.0	63.3	90.10	9.6471	0.016
9.00	129.7	68.0	90.13	9.1667	0.017
9.50	134.5	72.8	90.15	8.7368	0.018
10.00	139.4	77.7	90.17	8.3500	0.019
10.50	144.3	82.6	90.19	8.0000	0.021
11.00	149.4	87.7	90.21	7.6818	0.022
11.50	154.6	92.9	90.24	7.3913	0.024
12.00	160.0	98.3	90.27	7.1250	0.026
12.50	165.2	103.5	90.29	6.8800	0.027
13.00	170.6	108.9	90.31	6.6538	0.029
13.50	176.1	114.4	90.34	6.4444	0.031
14.00	181.8	120.1	90.35	6.2500	0.033
14.50	187.3	125.6	90.38	6.0690	0.035
15.00	193.0	131.3	90.40	5.9000	0.037
15.50	198.7	137.0	90.43	5.7419	0.039
16.00	204.5	142.8	90.45	5.5938	0.042
16.50	210.3	148.6	90.47	5.4545	0.044
17.00	216.1	154.4	90.50	5.3235	0.047
17.50	221.9	160.2	90.52	5.2000	0.049
18.00	227.7	166.0	90.55	5.0833	0.052
18.50	233.5	171.8	90.57	4.9730	0.055
19.00	239.3	177.6	90.59	4.8684	0.057
19.50	245.1	183.4	90.61	4.7692	0.060
20.00	250.9	189.2	90.64	4.6750	0.063
20.50	256.7	195.0	90.66	4.5854	0.066
21.00	262.4	200.7	90.68	4.5000	0.069

***** End Flow 2

***** Start Shutin 2

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING
 TEST: 11636 DST #1 Danielle 14-1 Western Oper. Co.
 DATE: 11/22/98 TIME: 12:22:27

Time	Pressure PSig	delta P PSig	Temp. DEG F	(T+dT)/dT	P^2/10^6
21.50	268.2	206.5	90.70	4.4186	0.072
22.00	273.8	212.1	90.73	4.3409	0.075
22.50	279.5	217.8	90.75	4.2667	0.078
23.00	285.2	223.5	90.77	4.1957	0.081
23.50	290.7	229.0	90.79	4.1277	0.084
24.00	296.2	234.5	90.82	4.0625	0.088
24.50	301.7	240.0	90.83	4.0000	0.091
25.00	307.1	245.4	90.86	3.9400	0.094
25.50	312.5	250.8	90.88	3.8824	0.098
26.00	317.8	256.1	90.91	3.8269	0.101
26.50	323.1	261.4	90.92	3.7736	0.104
27.00	328.2	266.5	90.94	3.7222	0.108
27.50	333.3	271.6	90.97	3.6727	0.111
28.00	338.5	276.8	90.99	3.6250	0.115
28.50	343.6	281.8	91.02	3.5789	0.118
29.00	348.5	286.8	91.04	3.5345	0.121
29.50	353.4	291.7	91.06	3.4915	0.125
30.00	358.3	296.5	91.08	3.4500	0.128
30.50	363.0	301.3	91.10	3.4098	0.132
31.00	367.7	306.0	91.13	3.3710	0.135
31.50	372.4	310.7	91.14	3.3333	0.139
32.00	377.0	315.2	91.17	3.2969	0.142
32.50	381.5	319.8	91.19	3.2615	0.146
33.00	386.0	324.3	91.21	3.2273	0.149
33.50	390.5	328.8	91.23	3.1940	0.152
34.00	394.7	333.0	91.25	3.1618	0.156
34.50	399.0	337.3	91.27	3.1304	0.159
35.00	403.1	341.4	91.29	3.1000	0.163
35.50	407.2	345.5	91.32	3.0704	0.166
36.00	411.5	349.8	91.33	3.0417	0.169
36.50	415.3	353.6	91.35	3.0137	0.172
37.00	419.2	357.5	91.37	2.9865	0.176
37.50	423.1	361.4	91.40	2.9600	0.179
38.00	426.9	365.2	91.42	2.9342	0.182
38.50	430.6	368.9	91.44	2.9091	0.185
39.00	434.3	372.5	91.46	2.8846	0.189
39.50	437.9	376.2	91.48	2.8608	0.192
40.00	441.4	379.7	91.50	2.8375	0.195
40.50	444.8	383.1	91.52	2.8148	0.198
41.00	448.3	386.6	91.54	2.7927	0.201
41.50	451.6	389.9	91.56	2.7711	0.204
42.00	454.9	393.2	91.57	2.7500	0.207
42.50	458.2	396.5	91.60	2.7294	0.210
43.00	461.3	399.6	91.62	2.7093	0.213
43.50	464.5	402.7	91.63	2.6897	0.216
44.00	467.5	405.8	91.65	2.6705	0.219
44.50	470.6	408.9	91.68	2.6517	0.221
45.00	473.5	411.8	91.71	2.6333	0.224
45.50	476.3	414.6	91.72	2.6154	0.227
46.00	479.2	417.5	91.74	2.5978	0.230
46.50	482.0	420.3	91.74	2.5806	0.232

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING
 TEST: 11636 DST #1 Danielle 14-1 Western Oper. Co.
 DATE: 11/22/98 TIME: 12:22:27

Time	Pressure PSig	delta P PSig	Temp. DEG F	(T+dT)/dT	P ² /10 ⁶
47.00	484.8	423.1	91.77	2.5638	0.235
47.50	487.5	425.8	91.79	2.5474	0.238
48.00	490.1	428.4	91.81	2.5312	0.240
48.50	492.7	431.0	91.83	2.5155	0.243
49.00	495.3	433.6	91.85	2.5000	0.245
49.50	497.8	436.1	91.87	2.4848	0.248
50.00	500.3	438.6	91.88	2.4700	0.250
50.50	502.6	440.9	91.91	2.4554	0.253
51.00	505.0	443.3	91.92	2.4412	0.255
51.50	507.4	445.7	91.94	2.4272	0.257
52.00	509.7	448.0	91.96	2.4135	0.260
52.50	512.0	450.3	91.98	2.4000	0.262
53.00	514.2	452.5	91.99	2.3868	0.264
53.50	516.4	454.7	92.02	2.3738	0.267
54.00	518.4	456.7	92.03	2.3611	0.269
54.50	520.6	458.9	92.05	2.3486	0.271
55.00	522.6	460.9	92.07	2.3364	0.273
55.50	524.6	462.9	92.09	2.3243	0.275
56.00	526.7	465.0	92.10	2.3125	0.277
56.50	528.6	466.9	92.12	2.3009	0.279
57.00	530.5	468.8	92.15	2.2895	0.281
57.50	532.5	470.8	92.16	2.2783	0.284
58.00	534.2	472.5	92.18	2.2672	0.285
58.50	536.1	474.4	92.20	2.2564	0.287
59.00	537.9	476.1	92.21	2.2458	0.289
59.50	539.6	477.9	92.23	2.2353	0.291
60.00	541.3	479.6	92.24	2.2250	0.293
60.50	543.0	481.3	92.26	2.2149	0.295
61.00	544.7	483.0	92.28	2.2049	0.297
61.50	546.3	484.6	92.30	2.1951	0.298
62.00	547.9	486.2	92.31	2.1855	0.300
62.50	549.6	487.9	92.33	2.1760	0.302
63.00	551.1	489.4	92.35	2.1667	0.304
63.50	552.5	490.8	92.37	2.1575	0.305
64.00	554.1	492.4	92.39	2.1484	0.307
64.50	555.5	493.8	92.40	2.1395	0.309
65.00	557.0	495.3	92.42	2.1308	0.310
65.50	558.4	496.7	92.44	2.1221	0.312
66.00	559.8	498.1	92.45	2.1136	0.313
66.50	561.2	499.5	92.47	2.1053	0.315
67.00	562.5	500.8	92.49	2.0970	0.316
67.50	563.9	502.1	92.50	2.0889	0.318
68.00	565.2	503.5	92.52	2.0809	0.319
68.50	566.5	504.7	92.54	2.0730	0.321
69.00	567.8	506.1	92.55	2.0652	0.322
69.50	568.9	507.2	92.57	2.0576	0.324
70.00	570.2	508.5	92.59	2.0500	0.325
70.50	571.3	509.6	92.60	2.0426	0.326
71.00	572.6	510.9	92.62	2.0352	0.328
71.50	573.7	512.0	92.64	2.0280	0.329
72.00	574.8	513.1	92.65	2.0208	0.330

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING
 TEST: 11636 DST #1 Danielle 14-1 Western Oper. Co.
 DATE: 11/22/98 TIME: 12:22:27

Time	Pressure PSig	delta P PSig	Temp. DEG F	(T+dT)/dT	P ² /10
72.50	576.0	514.3	92.68	2.0138	0.332
73.00	577.1	515.4	92.68	2.0068	0.333
73.50	578.3	516.5	92.70	2.0000	0.334
74.00	579.3	517.6	92.71	1.9932	0.336
74.50	580.4	518.6	92.74	1.9866	0.337
75.00	581.4	519.7	92.75	1.9800	0.338
75.50	582.4	520.7	92.77	1.9735	0.339
76.00	583.4	521.7	92.78	1.9671	0.340
76.50	584.4	522.7	92.79	1.9608	0.342
77.00	585.4	523.7	92.81	1.9545	0.343
77.50	586.3	524.6	92.83	1.9484	0.344
78.00	587.3	525.6	92.84	1.9423	0.345
78.50	588.2	526.5	92.86	1.9363	0.346
79.00	589.2	527.5	92.88	1.9304	0.347
79.50	590.1	528.4	92.89	1.9245	0.348
80.00	590.9	529.2	92.90	1.9187	0.349
80.50	591.9	530.2	92.92	1.9130	0.350
81.00	592.7	531.0	92.94	1.9074	0.351
81.50	593.6	531.8	92.95	1.9018	0.352
82.00	594.4	532.7	92.97	1.8963	0.353
82.50	595.3	533.6	92.98	1.8909	0.354
83.00	596.1	534.4	93.00	1.8855	0.355
83.50	596.9	535.1	93.00	1.8802	0.356
84.00	597.7	536.0	93.03	1.8750	0.357
84.50	598.5	536.8	93.04	1.8698	0.358
85.00	599.2	537.5	93.07	1.8647	0.359
85.50	600.0	538.3	93.08	1.8596	0.360
86.00	600.8	539.1	93.09	1.8547	0.361
86.50	601.5	539.8	93.10	1.8497	0.362
87.00	602.2	540.5	93.11	1.8448	0.363
87.50	603.0	541.3	93.13	1.8400	0.364
88.00	603.6	541.9	93.15	1.8352	0.364
88.50	604.3	542.6	93.16	1.8305	0.365
89.00	605.0	543.3	93.17	1.8258	0.366
89.50	605.7	544.0	93.19	1.8212	0.367
342.00	1361.1	0.0	93.26		

***** End Shut-in 2

***** Final Hydro.

TRILORITE TESTING L.L.C.

P.O. Box 362 - Hays, Kansas 67601

FLUID SAMPLER DATA

Ticket No. 11636 Date 11-22-98
Company Name Western Oper. Co.
Lease Danielle 14-1 Test No.
County Sec. Twp. Rng.

SAMPLER RECOVERY

PIT MUD ANALYSIS

Gas ML
Oil ML
Mud 4,000 ML
Water ML
Other ML
Pressure 360 PSI
Total 4,000 ML

Chlorides 96,000 ppm.
Resistivity .09 ohms @ 63 F
Viscosity 34
Mud Weight 9.7
Filtrate n/c
Other LCM #2

SAMPLER ANALYSIS

PIPE RECOVERY

Resistivity .09 ohms @ 63 F
Chlorides 96,000 ppm.
Gravity corrected @ 60 F

TOP
Resistivity .09 ohms @ 63 F
Chlorides 96,000 ppm.

MIDDLE
Resistivity ohms @ F
Chlorides ppm.

BOTTOM
Resistivity ohms @ F
Chlorides Same as above ppm.

TRILOBITE TESTING L.L.C.

P.O. Box 362 • Hays, Kansas 67601

Test Ticket

No. 11636

Well Name & No. Danville #14-1 Test No. #1 Date 11-22-98
 Company Western Oper. Co. Zone Tested Clare
 Address 518 17th St, Suite 1680 Denver Colo, 80202 Elevation 2755' KB 2745' GL
 Co. Rep / Geo. Pete Debusch Cont. Murphy #25 Est. Ft. of Pay Por. %
 Location: Sec. 14 Twp. 20 Rge. 42 Co. Crawley State Ks
 No. of Copies Normal Distribution Sheet (Y, N) Turnkey (Y, N) N Evaluation (Y, N)

Interval Tested 2822' Anchor Length 2860' Initial Str Wt./Lbs. 68000 Unseated Str Wt./Lbs. 67000
 Top Packer Depth 38' Wt. Set Lbs. 24000 Wt. Pulled Loose/Lbs. 91000
 Bottom Packer Depth 2817' Tool Weight 7000
 Total Depth 2822' Hole Size — 7 7/8" Rubber Size — 6 3/4"
 Mud Wt. 9.7 LCM #2 Vis. 34 WL N/A Wt. Pipe Run Drill Collar Run 560' H-2
 Blow Description 1/4" @ open - built to 2 1/2" (acted like it was plugging)
No return
1/4" @ open - built to 1 1/2" died back to 1/2" (acted like it was plugging)
No return

Recovery — Total Feet	GIP	Ft. in DC	Ft. in DP
Rec. <u>60'</u>	Feet Of <u>Dark Mud</u>	<u>60'</u>	<u> </u>
Rec. <u> </u>	Feet Of <u> </u>	%gas <u> </u>	%oil <u> </u> %water <u>100</u> %mud <u> </u>
Rec. <u> </u>	Feet Of <u> </u>	%gas <u> </u>	%oil <u> </u> %water <u> </u> %mud <u> </u>
Rec. <u> </u>	Feet Of <u> </u>	%gas <u> </u>	%oil <u> </u> %water <u> </u> %mud <u> </u>
Rec. <u> </u>	Feet Of <u> </u>	%gas <u> </u>	%oil <u> </u> %water <u> </u> %mud <u> </u>
BHT <u>93°</u>	°F Gravity <u> </u>	%gas <u> </u>	%oil <u> </u> %water <u> </u> %mud <u> </u>
RW <u> </u>	@ <u> </u> °F Chlorides <u> </u>	°API D@ <u> </u>	°F Corrected Gravity <u> </u> °API <u> </u>

	AK-1	Alpine	PSI Recorder No.	T-On Location
(A) Initial Hydrostatic Mud	<u>150.9</u>	<u>152.2</u>	<u>2347</u>	<u>10:50 P.M.</u>
(B) First Initial Flow Pressure	<u>55</u>	<u>28</u>	(depth) <u>2823'</u>	T-Started <u>12:25 P.M.</u>
(C) First Final Flow Pressure	<u>55</u>	<u>35</u>	PSI Recorder No. <u>11058</u>	T-Open <u>14:48 P.M.</u>
(D) Initial Shut-In Pressure	<u>54.7</u>	<u>58.7</u>	(depth) <u>2855'</u>	T-Pulled <u>18:03 P.M.</u>
(E) Second Initial Flow Pressure	<u>64</u>	<u>40</u>	PSI Recorder No. <u> </u>	T-Out <u>20:00 P.M.</u>
(F) Second Final Flow Pressure	<u>64</u>	<u>61</u>	(depth) <u> </u>	T-Off Location <u>21:10 P.M.</u>
(G) Final Shut-in Pressure	<u>60.1</u>	<u>60.5</u>	PSI Initial Opening <u>15</u>	Test <u>X</u>
(Q) Final Hydrostatic Mud	<u>148.7</u>	<u>136.1</u>	PSI Initial Shut-in <u>30</u>	Jars <u>X</u>

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]

Final Flow 60 Safety Joint X
 Final Shut-in 90 Straddle
 Circ. Sub X N/C
 Sampler X
 Extra Packer
 Elec. Rec. X
 Mileage

TRILOBITE TESTING L.L.C.

OPERATOR : Western Oper.Co.

WELL NAME: Danielle 14-1

LOCATION : 14-20s-42w Greeley co KS

INTERVAL : 5028.00 To 5163.00 ft

DATE 11-27-98

KB 2755.00 ft

GR 2745.00 ft

TD 5163.00 ft

TICKET NO: 11637

DST #2

FORMATION: morrow

TEST TYPE: CONV.

RECORDER DATA

Mins	Field	1	2	3	4	TIME DATA-----
PF 15 Rec.	11058	11058	2347			PF Fr. 0750 to 0805 hr
SI 30 Range(Psi)	4500.0	4500.0	4995.0	0.0	0.0	IS Fr. 0805 to 0835 hr
SF 60 Clock(hrs)	12	12	alpin			SF Fr. 0835 to 0935 hr
FS 90 Depth(ft)	5157.0	5157.0	5063.0	0.0	0.0	FS Fr. 0935 to 1105 hr

	Field	1	2	3	4
Init Hydro	0.0	0.0	2613.0	0.0	0.0
First Flow	0.0	0.0	53.0	0.0	0.0
B1. Final Flow	0.0	0.0	63.0	0.0	0.0
In Shut-in	0.0	0.0	124.0	0.0	0.0
Init Flow	0.0	0.0	63.0	0.0	0.0
E. Final Flow	0.0	0.0	89.0	0.0	0.0
F. Fl Shut-in	0.0	0.0	139.0	0.0	0.0
Final Hydro	0.0	0.0	2441.0	0.0	0.0
Inside/Outside	i	i	o		

T STARTED 0420 hr
 T ON BOTM 0746 hr
 T OPEN 0750 hr
 T PULLED 1105 hr
 T OUT 1410 hr

TOOL DATA-----

Tool Wt.	5000.00 lbs
Wt Set On Packer	26000.00 lbs
Wt Pulled Loose	112000.00 lbs
Initial Str Wt	90000.00 lbs
Unseated Str Wt	91000.00 lbs
Bot Choke	0.75 in
Hole Size	7.88 in
D Col. ID	2.25 in
D. Pipe ID	3.50 in
D.C. Length	560.00 ft
D.P. Length	4559.00 ft

RECOVERY

30.00 ft of drilling mud 100% mud 30.00 ft in DC and 0.00 ft in DP
 0.00 ft of
 0.00 ft of
 0.00 ft of
 0.00 ft of
 0.00 ft of
 0.00 ft of

CALINITY 0.00 P.P.M. A.P.I. Gravity 0.00

FLOW DESCRIPTION

Initial Flow:
 1/2" at open built to 1 1/2"
 Initial Shut-in:
 No return
 Final Flow:
 1/4" at open built to 3/4"
 Final Shut-in:
 No return

MUD DATA-----

Mud Type	Chemical
Weight	9.20 lb/cf
Vis.	50.00 S/L
W.L.	8.00 in3
F.C.	0.00 in
Mud Drop N	

Amt. of fill 0.00 ft
 Btm. H. Temp. 128.00 F
 Hole Condition good
 % Porosity 0.00
 Packer Size 6.75 in
 No. of Packers 2
 Cushion Amt. 0.00
 Cushion Type
 Reversed Out N
 Tool Chased N
 Tester Shane McBride
 Co. Rep. Pete Debenham
 Contr. Murfin
 Rig # 25
 Unit #
 Pump T.

Test Successful: Y

*** TOOL DIAGRAM *** CONV.

WELL NAME: Danielle 14-1

LOCATION : 14-20s-42w Greeley co KS

TICKET No. 11637 D.S.T. No. 2 DATE 11-27-98

TOTAL TOOL TO BOTTOM OF TOP PACKERS 30

INTERVAL TOOL

BOTTOM PACKERS AND ANCHOR 41

TOTAL TOOL 71

DRILL COLLAR ANCHOR IN INTERVAL

C. ANCHOR STND.	Stands	Single	Total
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D.P. ANCHOR STND.	Stands	1	Single	Total	94
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TOTAL ASSEMBLY 165

C. ABOVE TOOLS.	Stands	6	Single	Total	560
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D.P. ABOVE TOOLS.	Stands	48	Single	2	Total	4465
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TOTAL DRILL COLLARS DRILL PIPE & TOOLS .. 5190

TOTAL DEPTH 5163

TOTAL DRILL PIPE ABOVE K.B. 27

REMARKS:

GAS;

L;

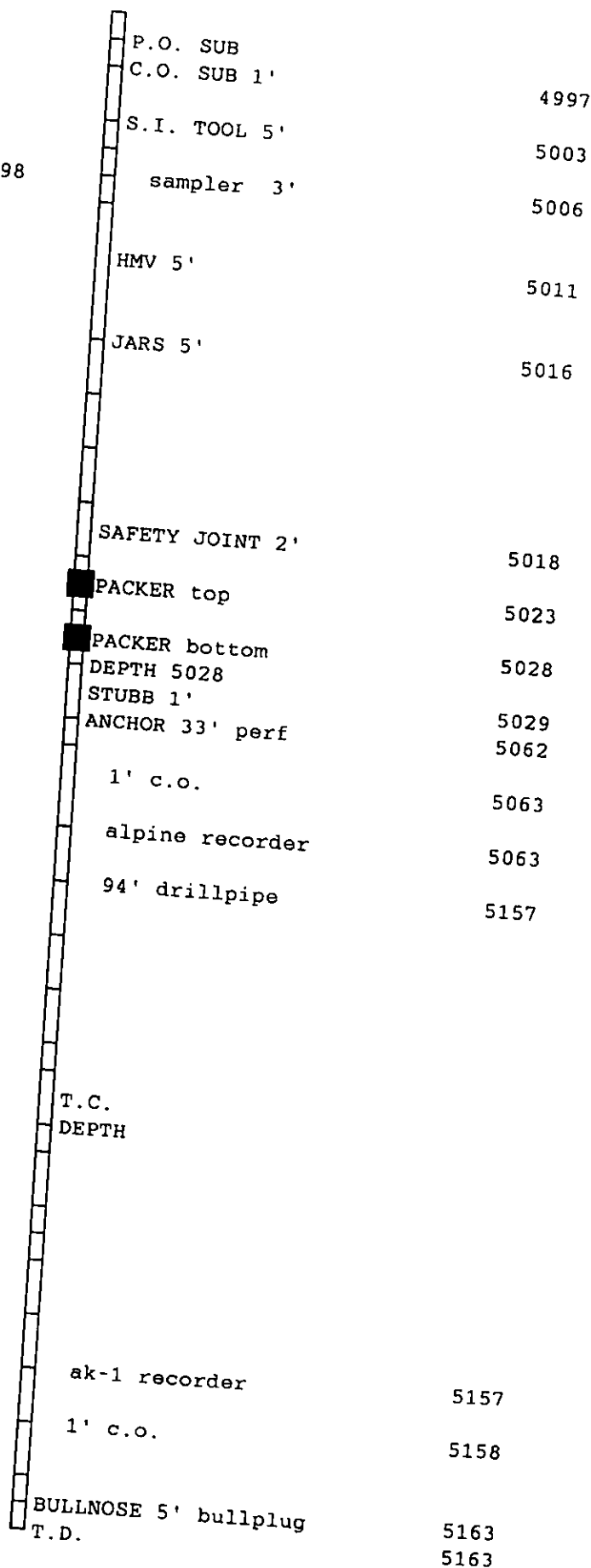
WATER;

D; 4,000 ml

tal; 4,000 ml.

Pressure 110 psi.

lorides in sampler 4500



TEST HISTORY

11637 DST #2 Danielle 14-1 Western Oper. Co.

	t (Min.)	P (PSig)	Flag Points
A:	0.00	2613.22	
B:	0.00	53.46	
C:	15.00	63.09	
D:	29.50	124.43	
E:	0.00	63.79	
F:	38.50	89.59	
G:	110.50	139.85	
Q:	0.00	2441.54	

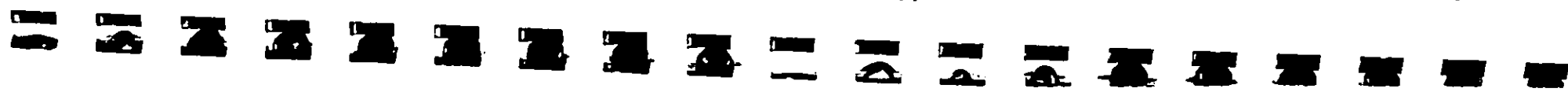
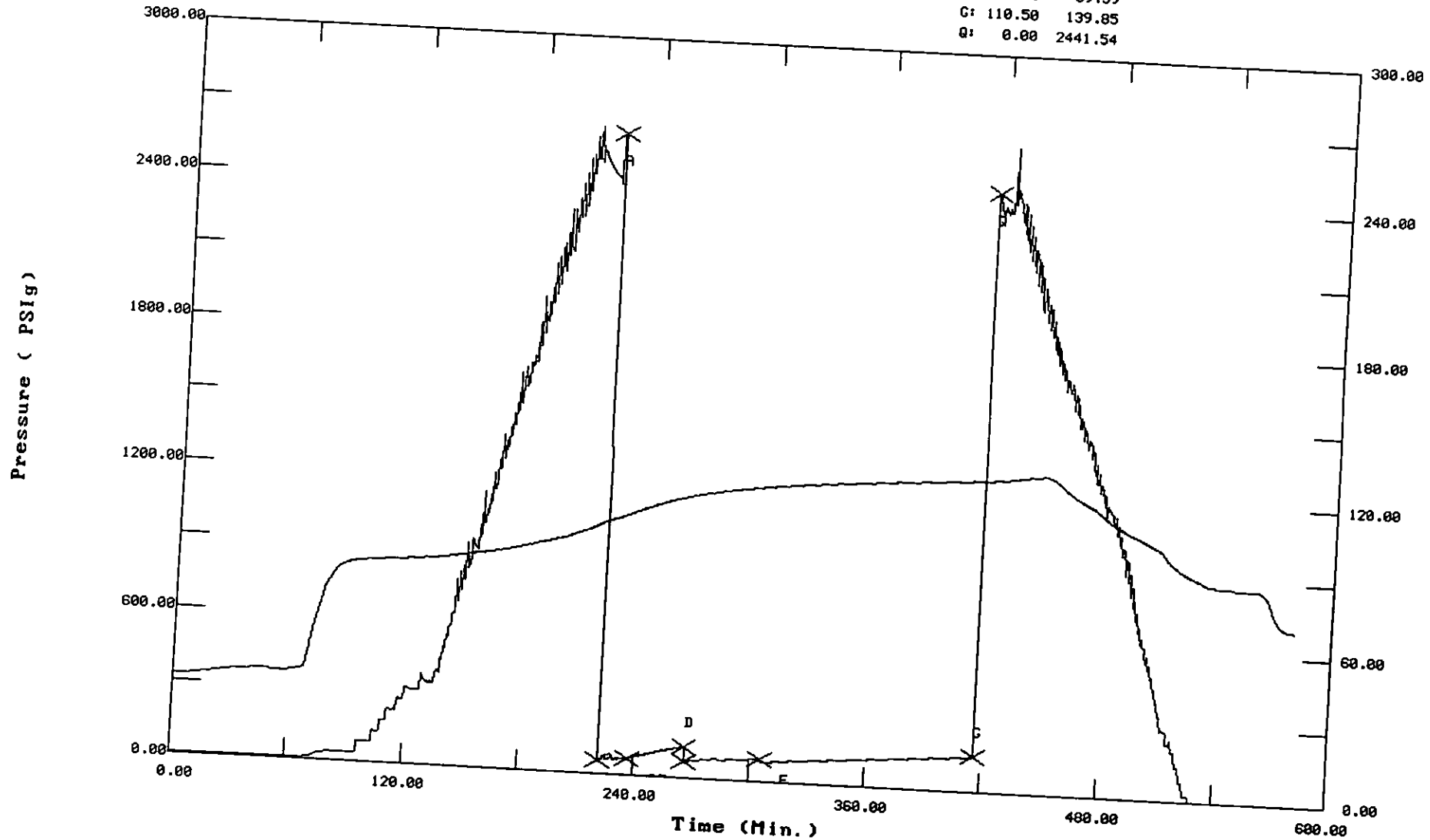
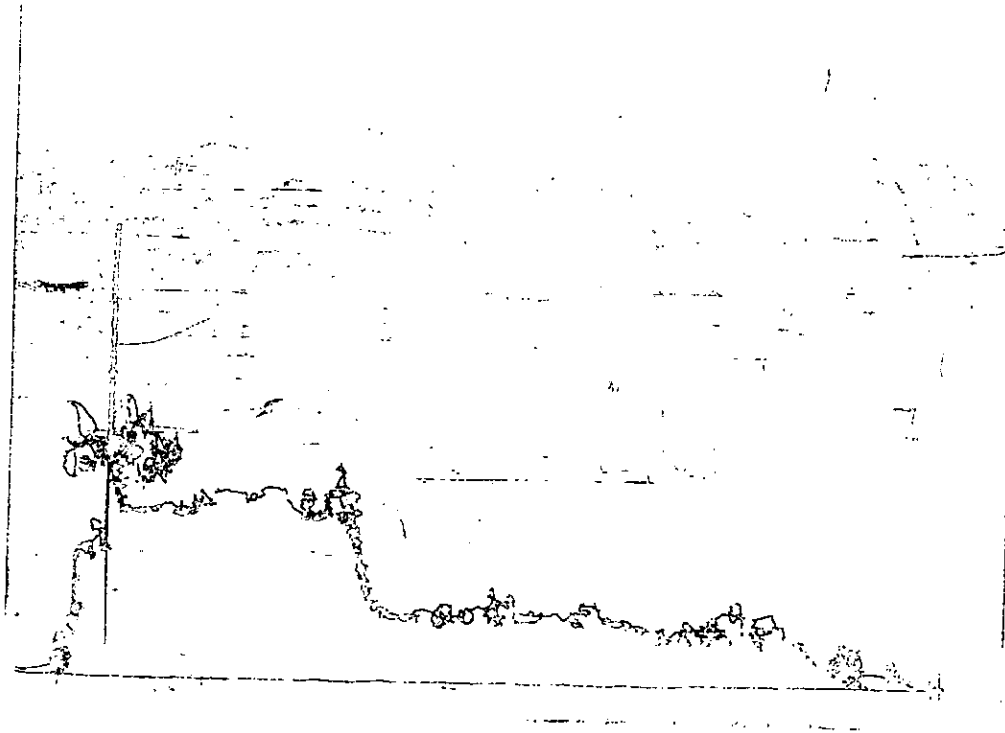


CHART PAGE

11058 #2



This is a photocopy of the actual AK-1 recorder chart

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING
 TEST: 11637 DST #2 Danielle 14-1 Western Oper. Co.
 DATE: 11/22/98 TIME: 21:51:38

	Time	Pressure PSig	delta P PSig	Temp. DEG F	(T+dT)/dT	P ² /10 ⁶
***** Initial Hydro.	221.00	2613.2	0.0	102.45		
***** Start Flow 1	0.00	53.5	0.0	102.81		
	0.50	53.8	0.3	102.97		
	1.00	54.3	0.8	103.12		
	1.50	59.9	6.4	103.26		
	2.00	60.6	7.1	103.38		
	2.50	67.4	14.0	103.51		
	3.00	69.1	15.7	103.61		
	3.50	75.6	22.1	103.75		
	4.00	59.9	6.5	103.88		
	4.50	58.6	5.2	103.99		
	5.00	60.1	6.6	104.12		
	5.50	62.4	8.9	104.25		
	6.00	66.0	12.6	104.37		
	6.50	69.5	16.1	104.51		
	7.00	72.9	19.4	104.65		
	7.50	59.9	6.4	104.79		
	8.00	59.9	6.4	104.94		
	8.50	59.4	5.9	105.08		
	9.00	61.3	7.9	105.24		
	9.50	60.5	7.0	105.39		
	10.00	61.5	8.0	105.55		
	10.50	61.5	8.0	105.71		
	11.00	63.5	10.1	105.86		
	11.50	61.0	7.5	106.03		
	12.00	62.8	9.3	106.19		
	12.50	64.4	10.9	106.36		
	13.00	66.2	12.7	106.51		
	13.50	67.8	14.3	106.67		
	14.00	62.0	8.6	106.83		
***** End Flow 1	14.50	63.7	10.2	107.01		
	15.00	63.1	9.6	107.16		
***** Start Shutin 1	0.00	63.1	0.0	107.16	0.0000	0.004
	0.50	64.6	1.5	107.32	31.0000	0.004
	1.00	65.8	2.7	107.48	16.0000	0.004
	1.50	67.2	4.1	107.64	11.0000	0.005
	2.00	68.4	5.3	107.79	8.5000	0.005
	2.50	69.6	6.5	107.95	7.0000	0.005
	3.00	70.9	7.8	108.11	6.0000	0.005
	3.50	72.1	9.0	108.27	5.2857	0.005
	4.00	73.3	10.2	108.43	4.7500	0.005
	4.50	74.6	11.5	108.58	4.3333	0.006
	5.00	75.6	12.6	108.73	4.0000	0.006
	5.50	76.7	13.6	108.88	3.7273	0.006
	6.00	78.0	14.9	109.03	3.5000	0.006
	6.50	79.0	15.9	109.18	3.3077	0.006
	7.00	80.2	17.1	109.33	3.1429	0.006
	7.50	81.2	18.1	109.47	3.0000	0.007
	8.00	82.3	19.2	109.61	2.8750	0.007
	8.50	83.4	20.3	109.76	2.7647	0.007
	9.00	84.6	21.5	109.90	2.6667	0.007

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 11637 DST #2 Danielle 14-1 Western Oper. Co.
 DATE: 11/22/98 TIME: 21:51:38

Time	Pressure PSIG	delta P PSIG	Temp. DEG F	(T+dT)/dT	P ² /10 ⁶
9.50	85.7	22.6	110.03	2.5789	0.007
10.00	86.8	23.7	110.18	2.5000	0.008
10.50	88.0	24.9	110.32	2.4286	0.008
11.00	89.2	26.1	110.45	2.3636	0.008
11.50	90.2	27.1	110.58	2.3043	0.008
12.00	91.4	28.3	110.71	2.2500	0.008
12.50	92.4	29.4	110.84	2.2000	0.009
13.00	93.5	30.4	110.98	2.1538	0.009
13.50	94.7	31.6	111.11	2.1111	0.009
14.00	95.8	32.7	111.23	2.0714	0.009
14.50	96.6	33.5	111.36	2.0345	0.009
15.00	97.7	34.6	111.48	2.0000	0.01
15.50	98.7	35.6	111.61	1.9677	0.01
16.00	99.8	36.7	111.73	1.9375	0.01
16.50	100.7	37.6	111.85	1.9091	0.010
17.00	101.7	38.6	111.97	1.8824	0.010
17.50	102.8	39.7	112.08	1.8571	0.011
18.00	103.7	40.6	112.20	1.8333	0.011
18.50	104.7	41.6	112.32	1.8108	0.011
19.00	105.8	42.7	112.43	1.7895	0.011
19.50	106.7	43.6	112.54	1.7692	0.011
20.00	107.8	44.7	112.65	1.7500	0.012
20.50	108.7	45.6	112.76	1.7317	0.012
21.00	109.5	46.4	112.86	1.7143	0.012
21.50	110.7	47.6	112.96	1.6977	0.012
22.00	109.6	46.5	113.07	1.6818	0.012
22.50	110.6	47.5	113.18	1.6667	0.012
23.00	111.7	48.6	113.28	1.6522	0.012
23.50	112.8	49.7	113.39	1.6383	0.013
24.00	113.8	50.7	113.49	1.6250	0.013
24.50	114.8	51.7	113.58	1.6122	0.013
25.00	115.8	52.7	113.68	1.6000	0.013
25.50	116.9	53.8	113.78	1.5882	0.014
26.00	117.9	54.8	113.87	1.5769	0.014
26.50	118.6	55.6	113.97	1.5660	0.014
27.00	119.7	56.6	114.06	1.5556	0.014
27.50	120.8	57.7	114.16	1.5455	0.015
28.00	121.9	58.8	114.25	1.5357	0.015
28.50	122.8	59.7	114.34	1.5263	0.015
29.00	123.8	60.7	114.44	1.5172	0.015
29.50	124.4	61.3	114.53	1.5085	0.015
0.00	63.8	0.0	114.61		
0.50	64.4	0.6	114.70		
1.00	64.6	0.8	114.78		
1.50	65.9	2.1	114.87		
2.00	65.5	1.7	114.95		
2.50	66.4	2.6	115.03		
3.00	67.0	3.2	115.11		
3.50	67.9	4.1	115.19		
4.00	68.4	4.6	115.27		
4.50	68.2	4.4	115.35		

***** End Shut-in 1

**** Start Flow 2

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 11637 DST #2 Danielle 14-1 Western Oper. Co.

DATE: 11/22/98 TIME: 21:51:38

Time	Pressure PSig	delta P PSig	Temp. DEG F	(T+dT)/dT	P ² /10 ⁶
5.00	68.9	5.1	115.42		
5.50	69.6	5.8	115.50		
6.00	70.2	6.4	115.57		
6.50	70.9	7.1	115.65		
7.00	71.5	7.7	115.72		
7.50	72.1	8.4	115.80		
8.00	72.7	9.0	115.87		
8.50	72.8	9.0	115.95		
9.00	73.4	9.6	116.01		
9.50	73.9	10.1	116.10		
10.00	74.6	10.8	116.17		
10.50	75.0	11.3	116.23		
11.00	75.6	11.8	116.30		
11.50	76.2	12.4	116.38		
12.00	76.7	12.9	116.44		
12.50	77.2	13.4	116.52		
13.00	77.6	13.8	116.58		
13.50	78.2	14.4	116.65		
14.00	78.8	15.0	116.71		
14.50	79.3	15.5	116.78		
15.00	79.7	15.9	116.85		
15.50	80.2	16.4	116.91		
16.00	80.7	16.9	116.98		
16.50	81.3	17.5	117.05		
17.00	81.7	17.9	117.11		
17.50	74.3	10.5	117.17		
18.00	75.1	11.3	117.24		
18.50	75.7	12.0	117.29		
19.00	76.3	12.5	117.36		
19.50	76.8	13.0	117.42		
20.00	77.3	13.5	117.48		
20.50	78.0	14.2	117.55		
21.00	78.5	14.7	117.61		
21.50	79.0	15.2	117.67		
22.00	79.5	15.7	117.72		
22.50	79.8	16.0	117.78		
23.00	80.4	16.6	117.84		
23.50	80.8	17.0	117.89		
24.00	81.3	17.5	117.95		
24.50	81.6	17.8	118.01		
25.00	82.1	18.3	118.07		
25.50	82.4	18.6	118.13		
26.00	82.9	19.1	118.19		
26.50	83.4	19.6	118.24		
27.00	83.7	19.9	118.30		
27.50	84.1	20.3	118.36		
28.00	80.6	16.8	118.42		
28.50	81.4	17.6	118.42		
29.00	82.0	18.2	118.49		
29.50	82.4	18.6	118.55		
30.00	82.4	18.6	118.60		

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 11637 DST #2 Danielle 14-1 Western Oper. Co.
 DATE: 11/22/98 TIME: 21:51:38

Time	Pressure PSig	delta P PSig	Temp. DEG F	(T+dT)/dT	P ² /10 ⁶
30.50	82.9	19.1	118.65		
31.00	83.3	19.5	118.71		
31.50	83.7	19.9	118.75		
32.00	84.2	20.4	118.81		
32.50	84.7	20.9	118.86		
33.00	85.1	21.3	118.91		
33.50	85.5	21.7	118.97		
34.00	85.8	22.0	119.01		
34.50	86.2	22.4	119.06		
35.00	86.6	22.8	119.11		
35.50	87.0	23.2	119.16		
36.00	87.4	23.6	119.21		
36.50	87.8	24.1	119.25		
37.00	88.2	24.5	119.31		
37.50	88.7	24.9	119.35		
38.00	89.2	25.4	119.41		
38.50	89.6	25.8	119.44		

***** End Flow 2

***** Start Shutin 2

0.00	89.6	0.0	119.44	0.0000	0.008
0.50	88.9	-0.7	119.49	108.0000	0.008
1.00	73.6	-16.0	119.54	54.5000	0.005
1.50	74.4	-15.2	119.59	36.6667	0.006
2.00	74.9	-14.7	119.63	27.7500	0.006
2.50	75.4	-14.2	119.67	22.4000	0.006
3.00	75.9	-13.7	119.71	18.8333	0.006
3.50	76.3	-13.3	119.76	16.2857	0.006
4.00	76.8	-12.8	119.80	14.3750	0.006
4.50	77.3	-12.3	119.84	12.8889	0.006
5.00	77.5	-12.0	119.89	11.7000	0.006
5.50	78.0	-11.6	119.93	10.7273	0.006
6.00	78.4	-11.2	119.97	9.9167	0.006
6.50	78.9	-10.7	120.01	9.2308	0.006
7.00	79.3	-10.3	120.06	8.6429	0.006
7.50	79.7	-9.9	120.10	8.1333	0.006
8.00	80.0	-9.6	120.14	7.6875	0.006
8.50	80.4	-9.2	120.18	7.2941	0.006
9.00	80.7	-8.9	120.22	6.9444	0.007
9.50	81.2	-8.4	120.27	6.6316	0.007
10.00	81.4	-8.2	120.31	6.3500	0.007
10.50	81.7	-7.9	120.35	6.0952	0.007
11.00	82.0	-7.6	120.39	5.8636	0.007
11.50	82.5	-7.1	120.43	5.6522	0.007
12.00	82.7	-6.9	120.48	5.4583	0.007
12.50	83.0	-6.6	120.51	5.2800	0.007
13.00	83.3	-6.2	120.55	5.1154	0.007
13.50	83.7	-5.9	120.59	4.9630	0.007
14.00	84.0	-5.5	120.63	4.8214	0.007
14.50	84.4	-5.2	120.67	4.6897	0.007
15.00	84.8	-4.8	120.71	4.5667	0.007
15.50	84.8	-4.7	120.76	4.4516	0.007
16.00	85.2	-4.4	120.78	4.3438	0.007
16.50	85.5	-4.1	120.83	4.2424	0.007

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING
 TEST: 11637 DST #2 Danielle 14-1 Western Oper. Co.
 DATE: 11/22/98 TIME: 21:51:38

Time	Pressure PSI _g	delta P PSI _g	Temp. DEG F	(T+dT)/dT	P ² /10 ⁶
17.00	85.9	-3.7	120.86	4.1471	0.007
17.50	86.2	-3.4	120.90	4.0571	0.007
18.00	86.5	-3.1	120.94	3.9722	0.007
18.50	86.8	-2.8	120.99	3.8919	0.008
19.00	87.1	-2.5	121.01	3.8158	0.008
19.50	87.6	-2.0	121.05	3.7436	0.008
20.00	87.8	-1.7	121.09	3.6750	0.008
20.50	88.1	-1.5	121.13	3.6098	0.008
21.00	88.5	-1.1	121.17	3.5476	0.008
21.50	88.8	-0.8	121.20	3.4884	0.008
22.00	89.0	-0.5	121.24	3.4318	0.008
22.50	89.1	-0.5	121.28	3.3778	0.008
23.00	89.4	-0.2	121.31	3.3261	0.008
23.50	89.8	0.3	121.35	3.2766	0.008
24.00	90.1	0.5	121.38	3.2292	0.008
24.50	90.4	0.8	121.42	3.1837	0.008
25.00	90.9	1.4	121.46	3.1400	0.008
25.50	91.1	1.5	121.49	3.0980	0.008
26.00	91.5	1.9	121.52	3.0577	0.008
26.50	91.8	2.2	121.56	3.0189	0.008
27.00	92.0	2.4	121.60	2.9815	0.008
27.50	92.2	2.6	121.63	2.9455	0.009
28.00	92.6	3.0	121.67	2.9107	0.009
28.50	92.9	3.3	121.70	2.8772	0.009
29.00	93.2	3.6	121.74	2.8448	0.009
29.50	93.5	3.9	121.77	2.8136	0.009
30.00	93.8	4.2	121.80	2.7833	0.009
30.50	94.1	4.5	121.84	2.7541	0.009
31.00	94.4	4.8	121.87	2.7258	0.009
31.50	94.6	5.0	121.91	2.6984	0.009
32.00	94.9	5.3	121.94	2.6719	0.009
32.50	95.2	5.6	121.97	2.6462	0.009
33.00	95.4	5.8	122.00	2.6212	0.009
33.50	95.8	6.2	122.04	2.5970	0.009
34.00	96.0	6.4	122.06	2.5735	0.009
34.50	96.4	6.8	122.10	2.5507	0.009
35.00	96.7	7.1	122.13	2.5286	0.009
35.50	97.0	7.4	122.17	2.5070	0.009
36.00	97.3	7.7	122.20	2.4861	0.009
36.50	97.7	8.1	122.23	2.4658	0.01
37.00	98.0	8.4	122.27	2.4459	0.01
37.50	98.1	8.5	122.30	2.4267	0.01
38.00	98.4	8.8	122.33	2.4079	0.01
38.50	98.8	9.2	122.36	2.3896	0.01
39.00	99.1	9.5	122.39	2.3718	0.01
39.50	99.3	9.7	122.42	2.3544	0.01
40.00	99.6	10.0	122.45	2.3375	0.01
40.50	100.0	10.4	122.49	2.3210	0.010
41.00	100.3	10.7	122.52	2.3049	0.010
41.50	100.8	11.2	122.54	2.2892	0.010
42.00	101.0	11.4	122.58	2.2738	0.010

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING
 TEST: 11637 DST #2 Danielle 14-1 Western Oper. Co.
 DATE: 11/22/98 TIME: 21:51:38

Time	Pressure PSIg	delta P PSIg	Temp. DEG F	(T+dT)/dT	P ² /10 ⁶
42.50	101.3	11.7	122.61	2.2588	0.010
43.00	101.3	11.8	122.63	2.2442	0.010
43.50	101.7	12.1	122.67	2.2299	0.010
44.00	102.0	12.5	122.70	2.2159	0.010
44.50	102.2	12.6	122.73	2.2022	0.010
45.00	102.6	13.0	122.75	2.1889	0.011
45.50	102.9	13.3	122.79	2.1758	0.011
46.00	103.2	13.6	122.82	2.1630	0.011
46.50	103.5	14.0	122.85	2.1505	0.011
47.00	103.8	14.2	122.87	2.1383	0.011
47.50	104.1	14.5	122.90	2.1263	0.011
48.00	104.4	14.8	122.94	2.1146	0.011
48.50	104.6	15.0	122.96	2.1031	0.011
49.00	105.0	15.5	122.99	2.0918	0.011
49.50	105.3	15.8	123.02	2.0808	0.011
50.00	105.7	16.1	123.04	2.0700	0.011
50.50	105.8	16.2	123.08	2.0594	0.011
51.00	106.2	16.6	123.10	2.0490	0.011
51.50	106.4	16.8	123.13	2.0388	0.011
52.00	106.7	17.1	123.16	2.0288	0.011
52.50	107.1	17.5	123.19	2.0190	0.011
53.00	107.3	17.7	123.21	2.0094	0.012
53.50	107.6	18.0	123.24	2.0000	0.012
54.00	107.8	18.2	123.27	1.9907	0.012
54.50	108.1	18.5	123.29	1.9817	0.012
55.00	108.4	18.8	123.32	1.9727	0.012
55.50	108.7	19.1	123.35	1.9640	0.012
56.00	109.0	19.4	123.39	1.9554	0.012
56.50	109.3	19.7	123.41	1.9469	0.012
57.00	108.8	19.2	123.44	1.9386	0.012
57.50	109.2	19.6	123.46	1.9304	0.012
58.00	109.6	20.0	123.49	1.9224	0.012
58.50	109.8	20.2	123.51	1.9145	0.012
59.00	110.2	20.6	123.54	1.9068	0.012
59.50	110.5	20.9	123.57	1.8992	0.012
60.00	110.7	21.1	123.59	1.8917	0.012
60.50	111.1	21.5	123.62	1.8843	0.012
61.00	111.3	21.7	123.65	1.8770	0.012
61.50	111.6	22.0	123.68	1.8699	0.012
62.00	111.9	22.3	123.70	1.8629	0.013
62.50	112.1	22.6	123.72	1.8560	0.013
63.00	112.4	22.9	123.76	1.8492	0.013
63.50	112.6	23.0	123.78	1.8425	0.013
64.00	112.9	23.3	123.81	1.8359	0.013
64.50	113.3	23.7	123.83	1.8295	0.013
65.00	113.6	24.1	123.87	1.8231	0.013
65.50	114.0	24.4	123.88	1.8168	0.013
66.00	114.3	24.7	123.90	1.8106	0.013
66.50	114.5	24.9	123.93	1.8045	0.013
67.00	114.9	25.3	123.96	1.7985	0.013
67.50	115.1	25.5	123.98	1.7926	0.013

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING
 TEST: 11637 DST #2 Danielle 14-1 Western Oper. Co.
 DATE: 11/22/98 TIME: 21:51:38

Time	Pressure PSIg	delta P PSIg	Temp. DEG F	(T+dT)/dT	P ² /10 ⁶
68.00	115.5	25.9	124.01	1.7868	0.013
68.50	115.7	26.2	124.03	1.7810	0.013
69.00	116.0	26.4	124.05	1.7754	0.013
69.50	116.3	26.8	124.07	1.7698	0.014
70.00	116.6	27.0	124.10	1.7643	0.014
70.50	116.8	27.2	124.13	1.7589	0.014
71.00	117.1	27.5	124.15	1.7535	0.014
71.50	117.2	27.6	124.17	1.7483	0.014
72.00	117.5	28.0	124.20	1.7431	0.014
72.50	117.8	28.2	124.22	1.7379	0.014
73.00	118.0	28.5	124.24	1.7329	0.014
73.50	118.4	28.8	124.27	1.7279	0.014
74.00	118.8	29.2	124.29	1.7230	0.014
74.50	119.0	29.4	124.32	1.7181	0.014
75.00	119.4	29.8	124.34	1.7133	0.014
75.50	119.6	30.0	124.37	1.7086	0.014
76.00	119.9	30.3	124.39	1.7039	0.014
76.50	120.2	30.6	124.41	1.6993	0.014
77.00	120.6	31.1	124.44	1.6948	0.015
77.50	120.9	31.3	124.46	1.6903	0.015
78.00	121.1	31.6	124.50	1.6859	0.015
78.50	121.5	31.9	124.53	1.6815	0.015
79.00	121.8	32.2	124.53	1.6772	0.015
79.50	122.0	32.4	124.56	1.6730	0.015
80.00	122.3	32.7	124.58	1.6687	0.015
80.50	122.6	33.0	124.60	1.6646	0.015
81.00	122.9	33.3	124.64	1.6605	0.015
81.50	123.0	33.4	124.65	1.6564	0.015
82.00	123.3	33.7	124.68	1.6524	0.015
82.50	123.6	34.0	124.70	1.6485	0.015
83.00	124.0	34.4	124.72	1.6446	0.015
83.50	124.2	34.6	124.74	1.6407	0.015
84.00	124.5	34.9	124.77	1.6369	0.015
84.50	124.8	35.2	124.79	1.6331	0.016
85.00	125.1	35.5	124.82	1.6294	0.016
85.50	125.4	35.8	124.84	1.6257	0.016
86.00	125.8	36.2	124.86	1.6221	0.016
86.50	126.0	36.4	124.88	1.6185	0.016
87.00	126.3	36.7	124.90	1.6149	0.016
87.50	126.6	37.0	124.92	1.6114	0.016
88.00	126.9	37.3	124.95	1.6080	0.016
88.50	127.2	37.6	124.97	1.6045	0.016
89.00	127.4	37.8	124.99	1.6011	0.016
89.50	127.7	38.1	125.01	1.5978	0.016
90.00	127.9	38.3	125.03	1.5944	0.016
90.50	128.3	38.7	125.06	1.5912	0.016
91.00	128.6	39.0	125.07	1.5879	0.017
91.50	128.9	39.4	125.09	1.5847	0.017
92.00	129.2	39.6	125.12	1.5815	0.017
92.50	129.5	39.9	125.14	1.5784	0.017
93.00	129.8	40.2	125.16	1.5753	0.017

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING
 TEST: 11637 DST #2 Danielle 14-1 Western Oper. Co.
 DATE: 11/22/98 TIME: 21:51:38

Time	Pressure PSIg	delta P PSIg	Temp. DEG F	(T+dT)/dT	P ² /10 ⁶
93.50	130.0	40.5	125.19	1.5722	0.017
94.00	130.3	40.7	125.21	1.5691	0.017
94.50	130.5	40.9	125.24	1.5661	0.017
95.00	130.7	41.1	125.25	1.5632	0.017
95.50	130.9	41.3	125.28	1.5602	0.017
96.00	131.2	41.6	125.30	1.5573	0.017
96.50	131.4	41.9	125.32	1.5544	0.017
97.00	131.7	42.1	125.34	1.5515	0.017
97.50	132.0	42.4	125.37	1.5487	0.017
98.00	132.3	42.7	125.38	1.5459	0.018
98.50	132.7	43.1	125.40	1.5431	0.018
99.00	133.0	43.4	125.43	1.5404	0.018
99.50	133.2	43.7	125.44	1.5377	0.018
100.00	133.5	43.9	125.46	1.5350	0.018
100.50	133.8	44.2	125.49	1.5323	0.018
101.00	134.1	44.6	125.51	1.5297	0.018
101.50	134.4	44.9	125.53	1.5271	0.018
102.00	134.7	45.1	125.55	1.5245	0.018
102.50	135.1	45.5	125.57	1.5220	0.018
103.00	135.3	45.7	125.59	1.5194	0.018
103.50	135.6	46.1	125.61	1.5169	0.018
104.00	135.9	46.4	125.64	1.5144	0.018
104.50	136.3	46.7	125.66	1.5120	0.019
105.00	136.5	46.9	125.67	1.5095	0.019
105.50	136.9	47.3	125.69	1.5071	0.019
106.00	137.2	47.6	125.71	1.5047	0.019
106.50	137.4	47.8	125.73	1.5023	0.019
107.00	137.9	48.3	125.75	1.5000	0.019
107.50	138.1	48.5	125.77	1.4977	0.019
108.00	138.5	48.9	125.79	1.4954	0.019
108.50	138.6	49.0	125.81	1.4931	0.019
109.00	138.8	49.2	125.83	1.4908	0.019
109.50	139.2	49.6	125.85	1.4886	0.019
110.00	139.5	49.9	125.87	1.4864	0.019
110.50	139.9	50.3	125.89	1.4842	0.020
***** End Shut-in 2					
***** Final Hydro.	416.50	2441.5	0.0	125.93	

TRILOBITE TESTING L.L.C.

P.O. Box 362 - Hays, Kansas 67601

FLUID SAMPLER DATA

Ticket No. 11637 Date 11-22-98
Company Name Western Oper Co.
Lease Danielle 14-1 Test No. #2 montou
County Greene Ks Sec. 14 Twp. 20 Rng. 42

SAMPLER RECOVERY

Gas _____ ML
Oil _____ ML
Mud 4,000 ML
Water _____ ML
Other _____ ML
Pressure 110 PSI
Total 4,000 ML

PIT MUD ANALYSIS

Chlorides 4000 ppm.
Resistivity 1.8 ohms @ 60 ° F
Viscosity 50
Mud Weight 9.2
Filtrate 8.0
Other LCM #3

SAMPLER ANALYSIS

Resistivity 1.8 ohms @ 60 ° F
Chlorides 4,500 ppm.
Gravity _____ corrected @ 60 F

PIPE RECOVERY

TOP
Resistivity 1.6 ohms @ 60 ° F
Chlorides 4500 ppm.
MIDDLE
Resistivity _____ ohms @ _____ ° F
Chlorides _____ ppm.
BOTTOM
Resistivity _____ ohms @ _____ ° F
Chlorides _____ ppm.

TRILOBITE TESTING L.L.C.

P.O. Box 362 • Hays, Kansas 67601

Test Ticket

No 11637

Well Name & No. Dewilly 14-1 Test No. 2 Date 11-27-92
 Company Western Oper. Co. Zone Tested Merion
 Address 518 17th St. Suite 160 Denver Colo 80202 Elevation 7755 KB 275 GL
 Co. Rep / Geo. Pete Dibenham Cont. Murphy 25 Est. Ft. of Pay Por. %
 Location: Sec. 14 Twp. 20 Rge. 42 Co. Crowley State KS
 No. of Copies AKM Distribution Sheet (Y, N) N Turnkey (Y, N) N Evaluation (Y, N)

Interval Tested 5028 5163
 Anchor Length 135
 Top Packer Depth 5023
 Bottom Packer Depth 5028
 Total Depth 5163
 Mud Wt. 9.2 LCM # 3 Vis. 50 WL 8.0
 Blow Description 1/2" @ open slow build to 1 1/2" in.
No return.
1/4" @ open build to 3/4" in.
No return.

Recovery — Total Feet 30' GIP Ft. in DC 30' Ft. in DP
 Rec. 30' Feet Of Dr. lg mud %gas %oil %water 100 %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 128" °F Gravity °API D @ °F Corrected Gravity °API
 RW 1.6 @ 60 °F Chlorides 4,500 ppm Recovery Chlorides 400 ppm System

	AK-1	Alpine	PSI Recorder No.	T-On Location
(A) Initial Hydrostatic Mud		<u>2613</u>	<u>2347</u>	<u>02:30 AM</u>
(B) First Initial Flow Pressure		<u>53</u>	(depth) <u>5063</u>	T-Started <u>04:20 AM</u>
(C) First Final Flow Pressure	<u>Stop</u>	<u>62</u>	PSI Recorder No. <u>11058</u>	T-Open <u>07:50 AM</u>
(D) Initial Shut-In Pressure	<u>Stop</u>	<u>124</u>	(depth) <u>5157</u>	T-Pulled <u>11:05 AM</u>
(E) Second Initial Flow Pressure		<u>63</u>	PSI Recorder No. <u> </u>	T-Out <u>14:10 PM</u>
(F) Second Final Flow Pressure		<u>89</u>	(depth) <u> </u>	T-Off Location <u>15:15 PM</u>
(G) Final Shut-in Pressure		<u>139</u>	PSI Initial Opening <u>15</u>	Test <u>X</u>
(Q) Final Hydrostatic Mud		<u>2441</u>	PSI Initial Shut-in <u>30</u>	Jars <u>X</u>

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.

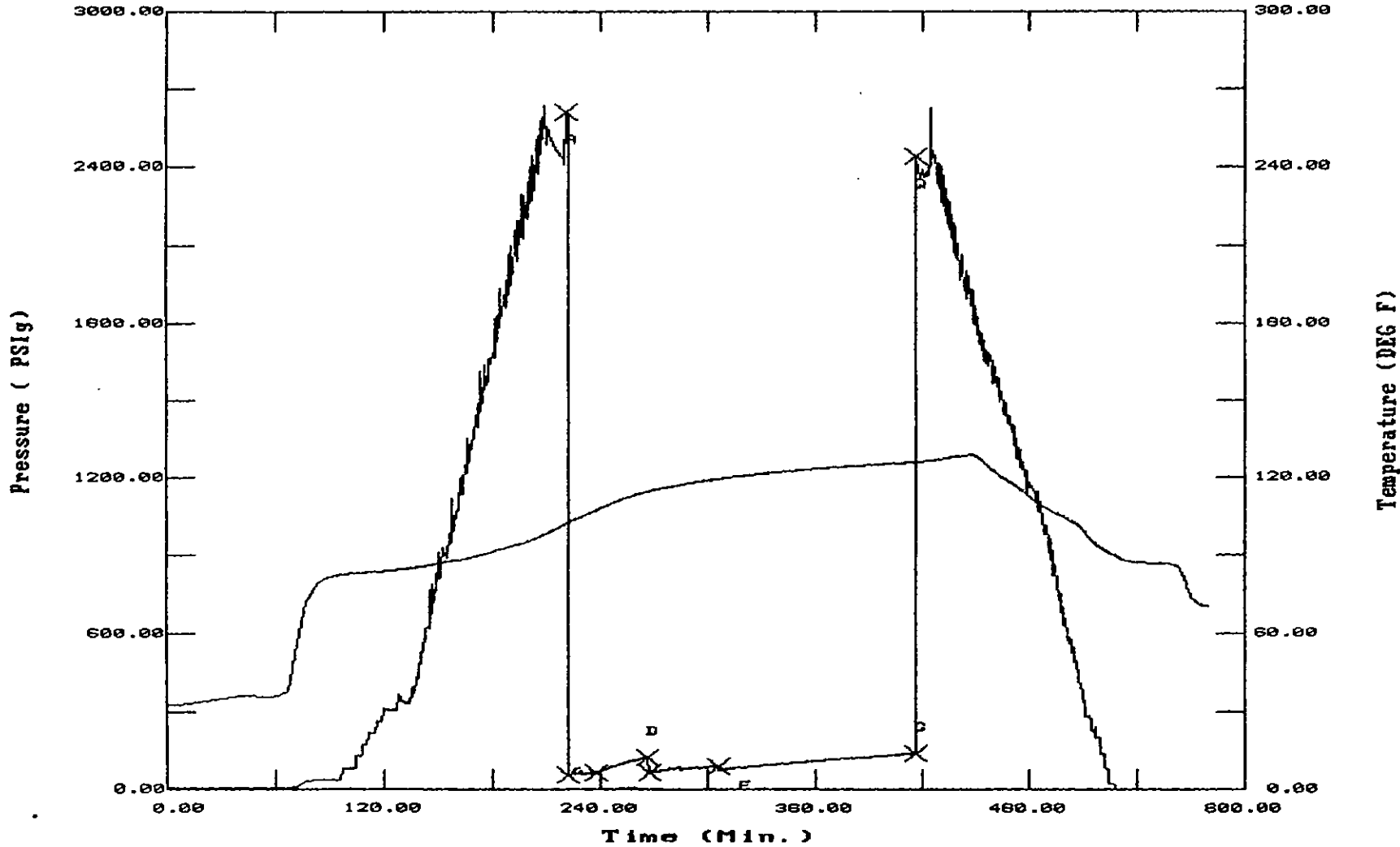
Approved By [Signature]
 Our Representative [Signature]

Final Flow 60 Safety Joint Y
 Final Shut-in 90 Straddle
 Circ. Sub X N/C
 Sampler X
 Extra Packer
 Elec. Rec. X
 Mileage
 Other
 TOTAL PRICE €

TEST HISTORY

11637 DST #2 Danielle 14-1 Western Oper.

	Flag Points t (Min.)	P (PSig)
H ₁	0.00	2613.22
B ₁	0.00	53.46
C ₁	15.00	63.09
D ₁	29.50	124.43
E ₁	0.00	63.79
F ₁	38.50	89.59
C ₂	110.50	139.85
Q ₂	0.00	2441.54



t.

TRILOBITE TESTING L.L.C.

OPERATOR : Western Oper. Co.
WELL NAME: Danielle 14-1
LOCATION : 14-20-42
INTERVAL : 5028.00 To 5163.00 ft

DATE 11-27-98
KB 2755.00 ft
GR 2745.00 ft
TD 5163.00 ft
TICKET NO: 11637
FORMATION: morrow
TEST TYPE: CONV.
DST #2

RECORDER DATA

Mins	Field	1	2	3	4	TIME DATA
F 15 Rec.	11058		2347			PF Fr. 0750 to 0805 hr
SI 30 Range(Psi)	4500.0	0.0	4995.0	0.0	0.0	IS Fr. 0805 to 0835 hr
SF 60 Clock(hrs)	12		alpin			SF Fr. 0835 to 0935 hr
FS 90 Depth(ft)	5157.0	0.0	5063.0	0.0	0.0	FS Fr. 0935 to 1105 hr

	Field	1	2	3	4	
A. Init Hydro	0.0	0.0	2613.0	0.0	0.0	T STARTED 0420 hr
B. First Flow	0.0	0.0	53.0	0.0	0.0	T ON BOTM 0746 hr
Bl. Final Flow	0.0	0.0	63.0	0.0	0.0	T OPEN 0750 hr
C. In Shut-in	0.0	0.0	124.0	0.0	0.0	T PULLED 1105 hr
D. Init Flow	0.0	0.0	63.0	0.0	0.0	T OUT 1410 hr
E. Final Flow	0.0	0.0	89.0	0.0	0.0	
F. Fl Shut-in	0.0	0.0	139.0	0.0	0.0	
G. Final Hydro	0.0	0.0	2441.0	0.0	0.0	
Inside/Outside	i		o			

RECOVERY
 Tot Fluid 30.00 ft of 30.00 ft in DC and 0.00 ft in DP
 30.00 ft of drill mud 100% mud
 0.00 ft of
 0.00 ft of
 0.00 ft of
 0.00 ft of
 0.00 ft of
 0.00 ft of
 0.00 ft of
 SALINITY 0.00 P.P.M. A.P.I. Gravity 0.00

TOOL DATA-----

Tool Wt.	5000.00 lbs
Wt Set On Packer	26000.00 lbs
Wt Pulled Loose	112000.00 lbs
Initial Str Wt	90000.00 lbs
Unseated Str Wt	91000.00 lbs
Bot Choke	0.75 in
Hole Size	7.88 in
D Col. ID	2.25 in
D. Pipe ID	3.50 in
D.C. Length	560.00 ft
D.P. Length	4559.00 ft

BLOW DESCRIPTION
 I.O.- 1/2" in. @ open built to 1 1/2" in.
 I.S.I.- No return
 F.F.- 1/4" in. @ open built to 3/4" in.
 F.S.I.- No return

MUD DATA-----

Mud Type	chem
Weight	9.20 lb/cf
Vis.	50.00 S/L
W.L.	8.00 in ³
F.C.	0.00 in
Mud Drop N	
Amt. of fill	0.00 ft
Btm. H. Temp.	128.00 F
Hole Condition	good
% Porosity	0.00
Packer Size	6.75 in
No. of Packers	2
Cushion Amt.	0.00
Cushion Type	
Reversed Out N	
Tool Chased N	
Tester	Shane McBride
Co. Rep.	Pete Debenham
Contr.	Murfin
Rig #	25
Unit #	
Pump T.	

SAMPLES:
SENT TO:

Test Successful: Y

*** TOOL DIAGRAM *** CONV.

WELL NAME: Danielle 14-1
 LOCATION : 14-20-42
 TICKET No. 11637 D.S.T. No. 2 DATE 11-27-98
 TOTAL TOOL TO BOTTOM OF TOP PACKERS 30
 INTERVAL TOOL
 BOTTOM PACKERS AND ANCHOR 41
 TOTAL TOOL 71
 DRILL COLLAR ANCHOR IN INTERVAL
 D.C. ANCHOR STND.Stands Single Total
 D.P. ANCHOR STND.Stands 1 Single Total 94
 TOTAL ASSEMBLY 165
 D.C. ABOVE TOOLS.Stands6 Single Total 560
 D.P. ABOVE TOOLS.Stands48 Single 2 Total 4465
 TOTAL DRILL COLLARS DRILL PIPE & TOOLS .. 5190
 TOTAL DEPTH 5163
 TOTAL DRILL PIPE ABOVE K.B. 27

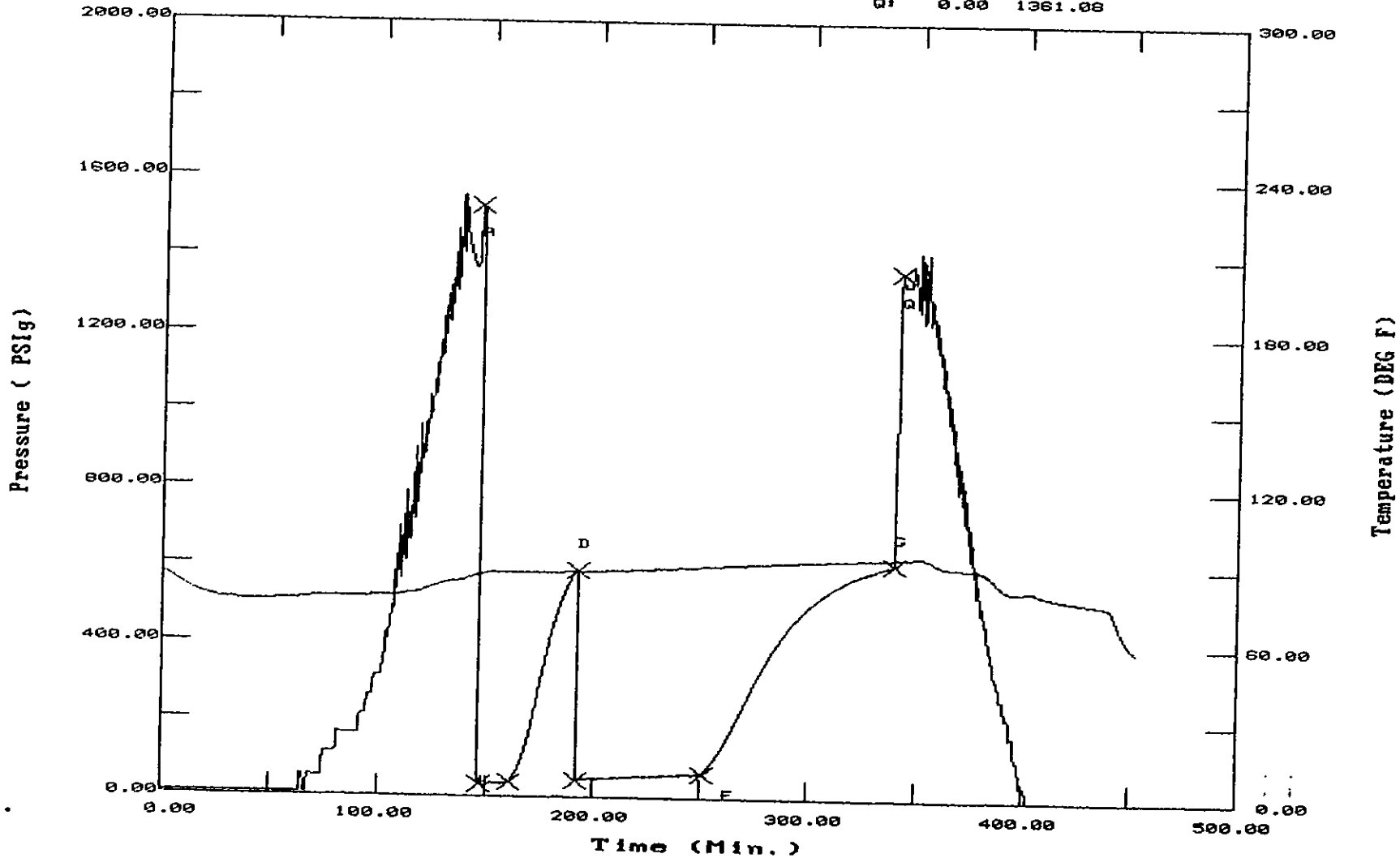
REMARKS:
 GAS;
 OIL;
 WATER;
 MUD; 4,000 ml
 Total; 4,000 ml.
 Pressure 110 psi.
 Chlorides in sampler 4500

P.O. SUB	
C.O. SUB 1'	4997
S.I. TOOL 5'	5003
sampler 3'	5006
HMV 5'	5011
JARS 5'	5016
SAFETY JOINT 2'	5018
PACKER top	5023
PACKER bottom	5028
DEPTH 5028	
STUBB 1'	5029
ANCHOR 33' perf	5062
1' c.o.	5063
alpine recorder	5063
94' drillpipe	5157
T.C.	
DEPTH	
ak-1 recorder	5157
1' c.o.	5158
BULLNOSE 5' bullplug	5163
T.D.	5163

TEST HISTORY

11636 DST #1 Danielle 14-1 Western Oper. Co.

	t (Min.)	P (PSig)
R:	0.00	1522.33
B:	0.00	28.18
C:	14.50	35.21
D:	30.50	587.28
E:	0.00	40.48
F:	59.00	61.71
G:	99.50	805.67
Q:	0.00	1361.08



TRILOBITE TESTING L.L.C.

OPERATOR : Western Oper. Co.
 WELL NAME: Danielle 14-1
 LOCATION : 14-20-42
 INTERVAL : 2822.00 To 2860.00 ft

DATE 11-22-98
 KB 3755.00 ft
 GR 3745.00 ft
 TD 2860.00 ft
 TICKET NO: 11636
 FORMATION: chase
 TEST TYPE: CONV.
 DST #1

RECORDER DATA

Mins	Field	1	2	3	4	TIME DATA
15	11058		2347			PF Fr. 1448 to 1503 hr
30	4500.0	0.0	4995.0	0.0	0.0	IS Fr. 1503 to 1533 hr
60	12		alpin			SF Fr. 1533 to 1633 hr
90	2855.0	0.0	2823.0	0.0	0.0	FS Fr. 1633 to 1803 hr

	Field	1	2	3	4
A. Init Hydro	1509.0	0.0	1522.0	0.0	0.0
B. First Flow	55.0	0.0	28.0	0.0	0.0
Bl. Final Flow	55.0	0.0	35.0	0.0	0.0
C. In Shut-in	567.0	0.0	587.0	0.0	0.0
D. Init Flow	66.0	0.0	40.0	0.0	0.0
E. Final Flow	66.0	0.0	61.0	0.0	0.0
F. Fl Shut-in	601.0	0.0	605.0	0.0	0.0
G. Final Hydro	1487.0	0.0	1361.0	0.0	0.0
Inside/Outside	i		o		

T STARTED 1225 hr
 T ON BOTM 1444 hr
 T OPEN 1448 hr
 T PULLED 1803 hr
 T OUT 2000 hr

TOOL DATA-----

Tool Wt.	4000.00	lbs
Wt Set On Packer	26000.00	lbs
Wt Pulled Loose	90000.00	lbs
Initial Str Wt	68000.00	lbs
Unseated Str Wt	69000.00	lbs
Bot Choke	0.75	in
Hole Size	7.88	in
D Col. ID	2.25	in
D. Pipe ID	3.50	in
D.C. Length	560.00	ft
D.P. Length	2249.00	ft

RECOVERY
 Tot Fluid 60.00 ft of 60.00 ft in DC and 0.00 ft in DP
 60.00 ft of drilg mud 100% mud
 0.00 ft of
 0.00 ft of
 0.00 ft of
 0.00 ft of
 0.00 ft of
 0.00 ft of
 0.00 ft of

SALINITY 0.00 P.P.M. A.P.I. Gravity 0.00

BLOW DESCRIPTION
 I.O- 1/4" in. @ open built to 2 1/2" in.
 I.S.I.- No return
 F.F.- 1/4" in. @ open built to 1 1/2" in.
 Sealed back to 1/2" in.
 P.S.I.- No return

MUD DATA-----

Mud Type	chem
Weight	9.70 lb/cf
Vis.	34.00 S/L
W.L.	0.00 in ³
F.C.	0.00 in
Mud Drop N	
Amt. of fill	0.00 ft
Btm. H. Temp.	93.00 F
Hole Condition	good
% Porosity	0.00
Packer Size	6.75 in
No. of Packers	2
Cushion Amt.	0.00
Cushion Type	
Reversed Out N	
Tool Chased N	
Tester	Shane McBride
Co. Rep.	Pete
Contr.	Murfin
Rig #	25
Unit #	
Pump T.	

Test Successful: Y

SAMPLES:
 SENT TO:

*** TOOL DIAGRAM *** CONV.

WELL NAME: Danielle 14-1

LOCATION : 14-20-42

TICKET No. 11636 D.S.T. No. 1 DATE 11-22-98

TOTAL TOOL TO BOTTOM OF TOP PACKERS 30

INTERVAL TOOL

BOTTOM PACKERS AND ANCHOR 38

TOTAL TOOL 68

DRILL COLLAR ANCHOR IN INTERVAL

D.C. ANCHOR STND.Stands Single Total

D.P. ANCHOR STND.Stands Single Total

TOTAL ASSEMBLY 68

D.C. ABOVE TOOLS.Stands6 Single Total 560

D.P. ABOVE TOOLS.Stands18 Single Total 2249

TOTAL DRILL COLLARS DRILL PIPE & TOOLS .. 2877

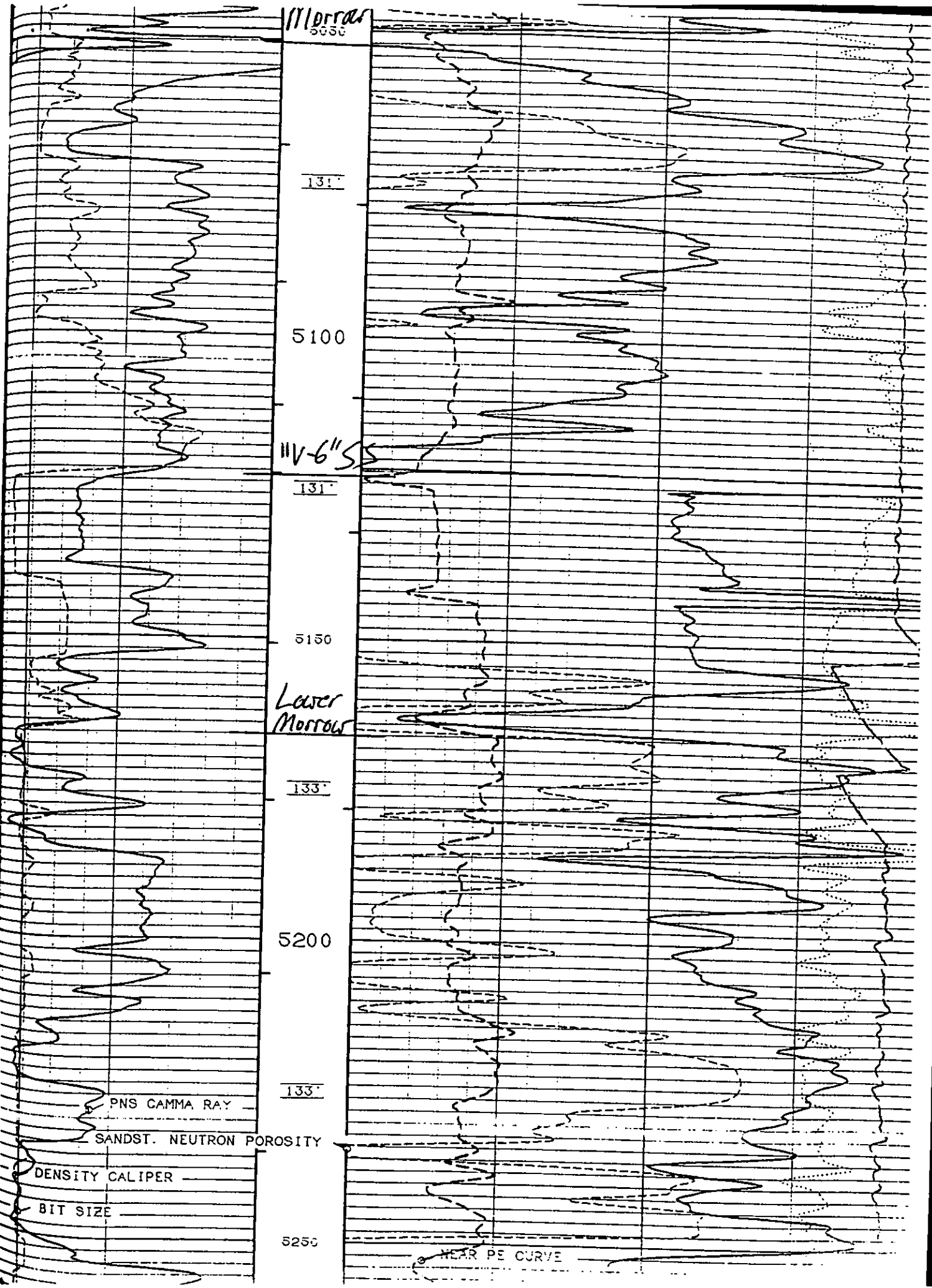
TOTAL DEPTH 2860

TOTAL DRILL PIPE ABOVE K.B. 17

REMARKS:

Blow surged on both opens like it was plugging.

P.O. SUB	
C.O. SUB 1'	2791
S.I. TOOL 5'	2797
sampler 3'	2800
HMV 5'	2805
JARS 5'	2810
SAFETY JOINT 2'	2812
PACKER top	2817
PACKER bottom	2822
DEPTH 2822	
STUBB 1'	2823
ANCHOR alpine recorder	2823
32' perf	2855
ak-1 recorder	2855
T.C. DEPTH	
BULLNOSE 5' bullplug	2860
T.D.	2860



Morrow
5050

131'

5100

11V-6"SS

131'

5150

Lower
Morrow

133'

5200

133'

PNS GAMMA RAY

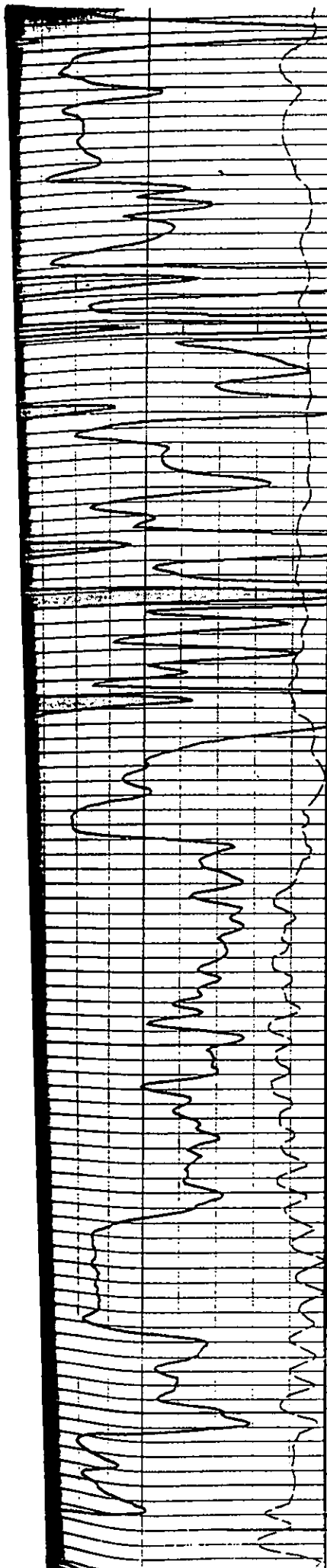
SANDST. NEUTRON POROSITY

DENSITY CALIPER

BIT SIZE

5250

NEAR PE CURVE



130'

5000

130'

Morris

5050

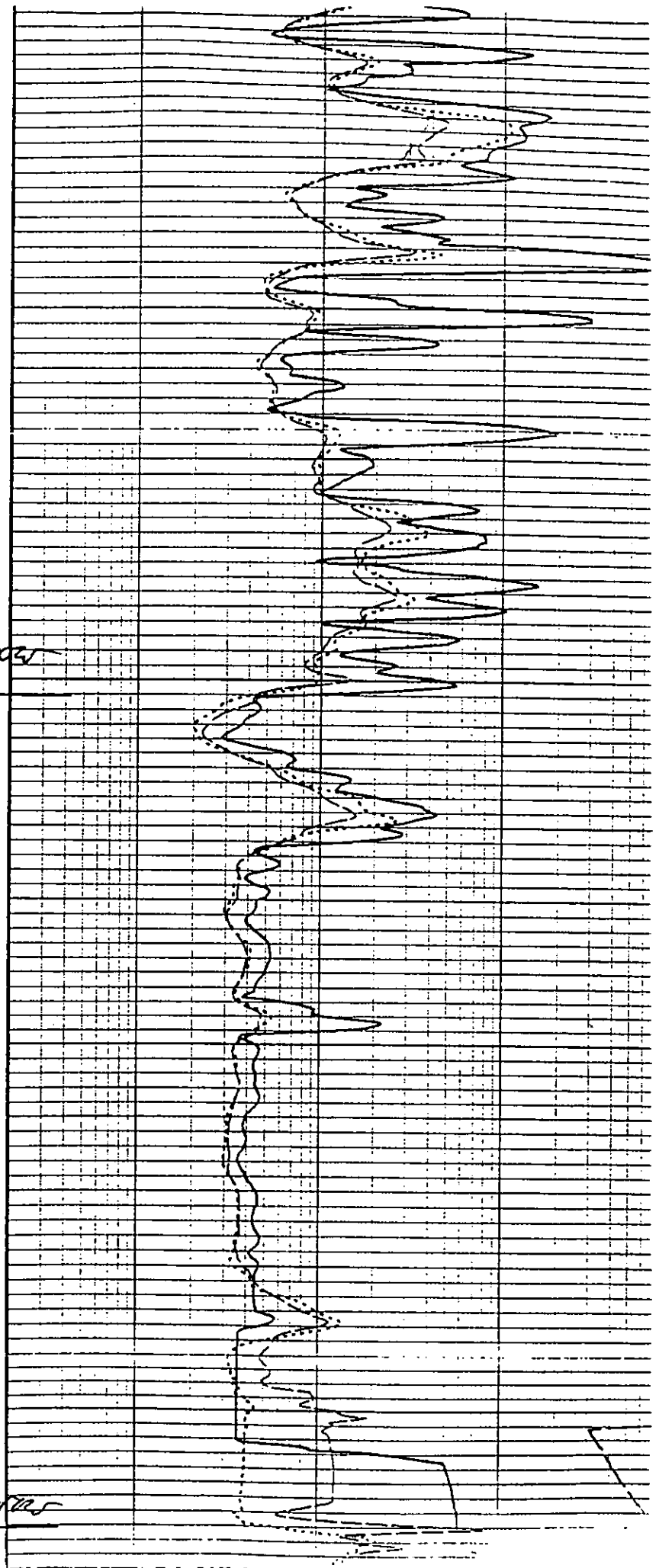
131'

5100

131'

5150

L. Morris



LS - LT BRN BLM
 FOSS TL TL Y
 SG -
 SH - BLK HD P
 DUB CITY
 LS - DK MTL
 DNS MFCP CRPKI MP
 SLTY CARB TIP
 OR CUB
 TR CORR
 SH - BK GY TO
 CRYS TO BKY
 FOST, IP
 SH - BK DK GY
 TO BLK CARB
 SH - GR KYGN
 SS(SV SP) - C
 DRNG IN MAR
 FR P SRTL SP
 CRT CLN SL
 LG TO OGC FR
 NO STN CR CRT
 UNCONCL GRS
 SH - BLK HD P
 DUB CITY
 FLOR TO M
 FOST W HP PRE
 FLOR TO STW
 TR CORR
 SH - BLK DK
 BKY CARB
 LS -

5000

MORROW

DIST # 2

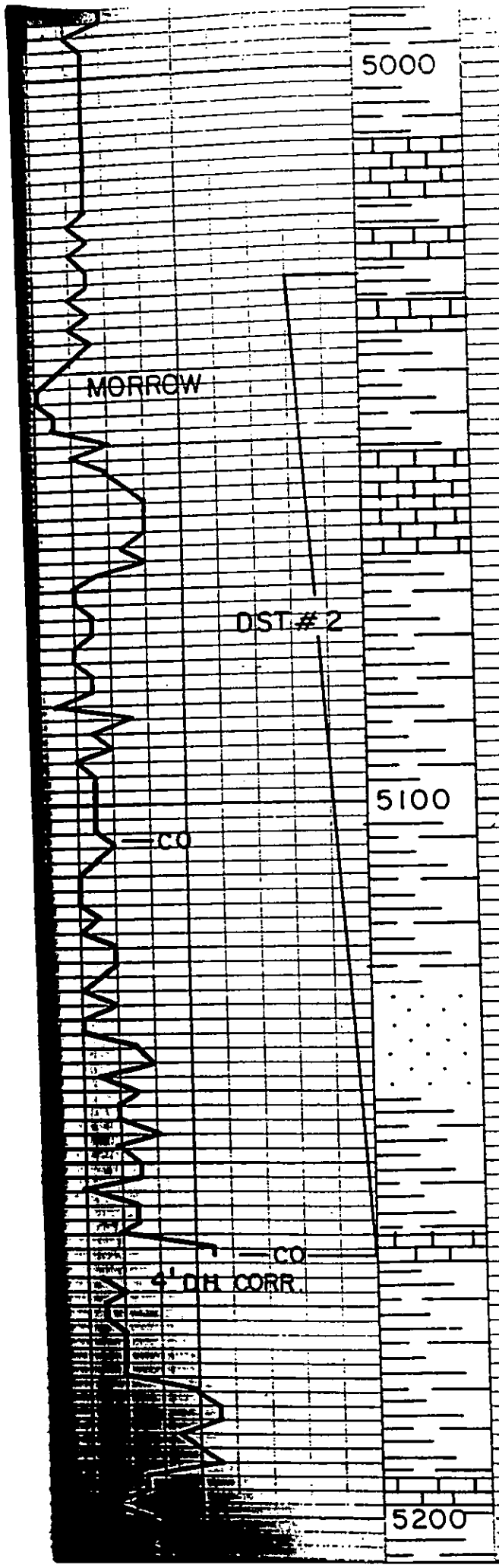
5100

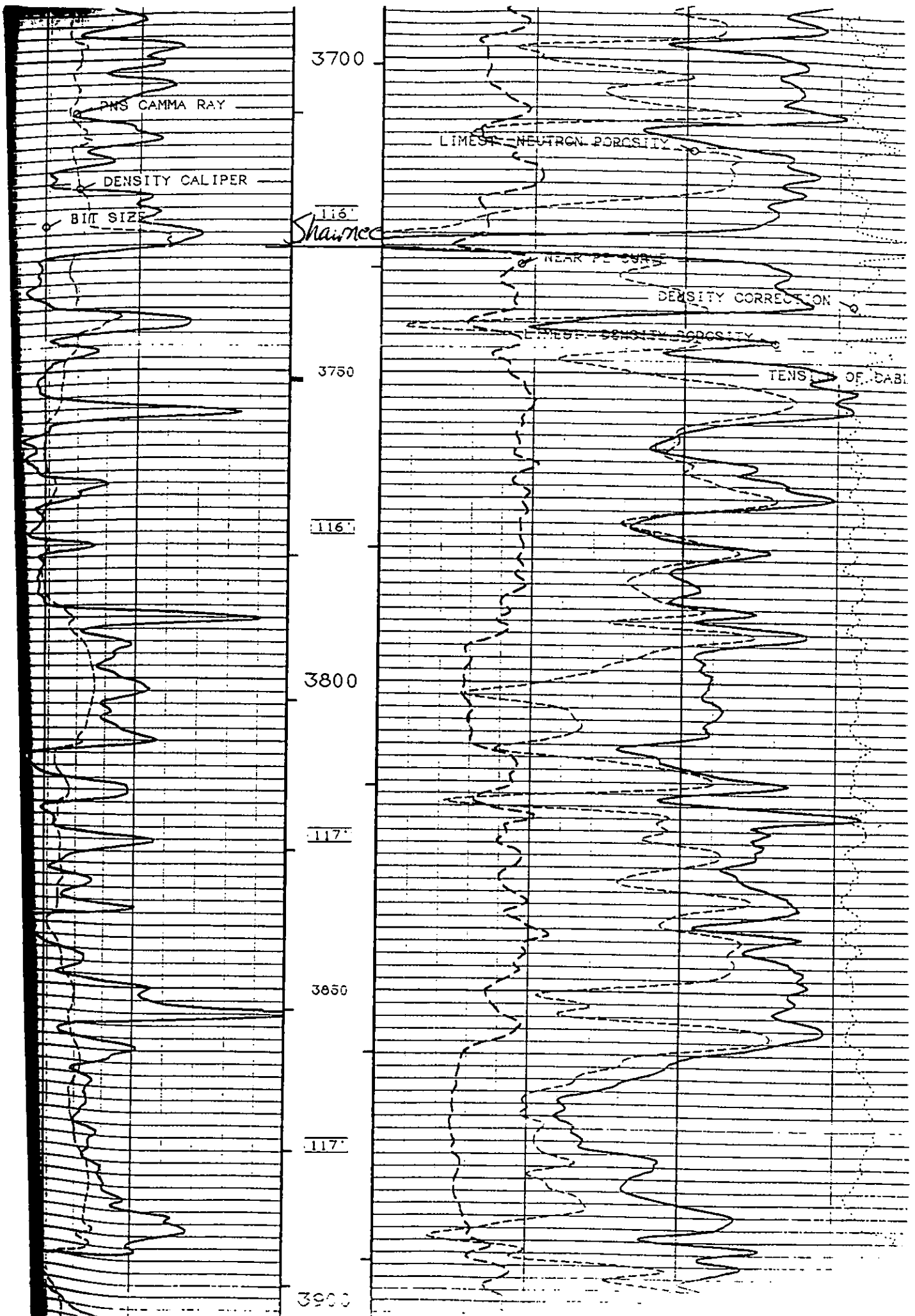
CO

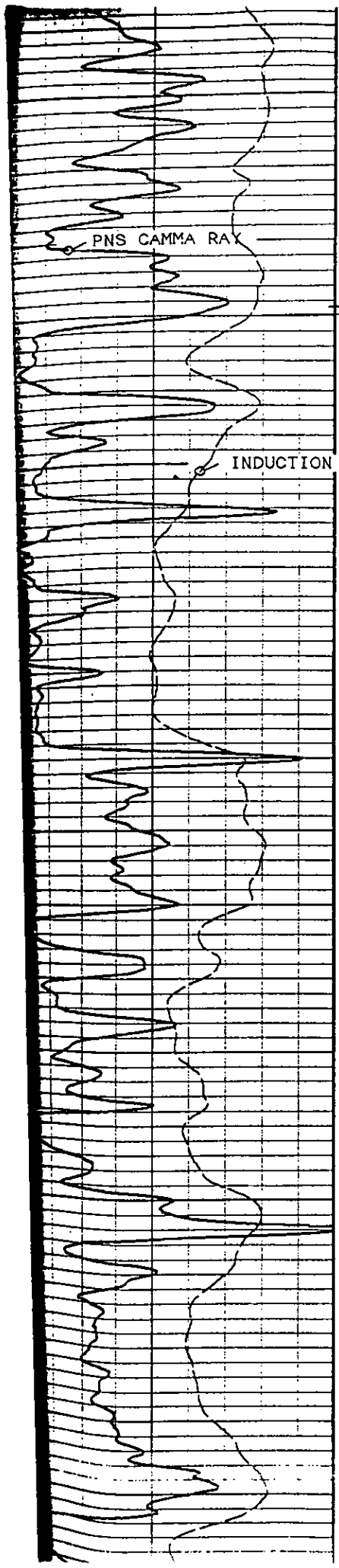
CO
4" DIH CORR.

TG

5200







3700

115
Shawnee

SHALLOW FE

DEEP INDUCTION

MEDIUM INDUCTION

TENSION OF CABLE

INDUCTION SPONS POTENT.

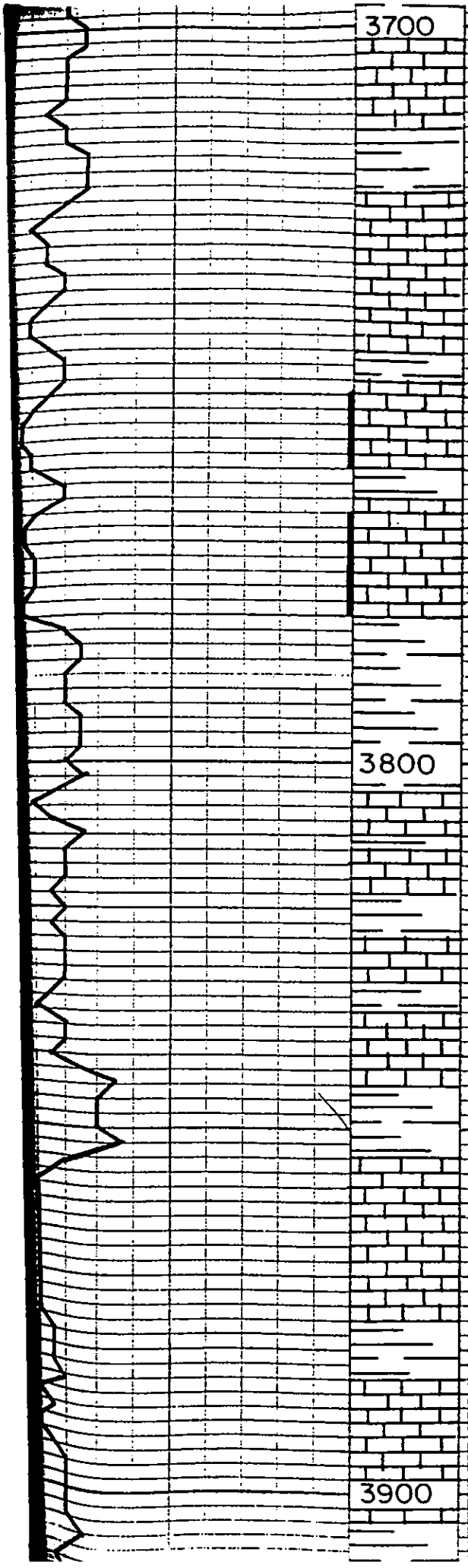
116

3800

117

3850

117



CALC SLTY

LS - MOT BRN TO CY W/ F XL DNS FOSS ARE CA Ø NO FLOR NO STN OR SH - AA

LS - M TO LT MOT BRN MICZXL MICZSLC BOT C FOSS SNDY IF TR INY PALE UP TO BL HYDR SHLY V ENT SLOW STN OF STN INTRE W/

LS - DK GRN MOT BRN DNS BRN FOSS FT NO

SH - BRN TO CY MOR FRM BL CY WXY TP DRY

LS - LT BRN TO CY TAN MICR MICXL MICZSLC TR POSS TR INTXL & VUG V NO STN OR CUT

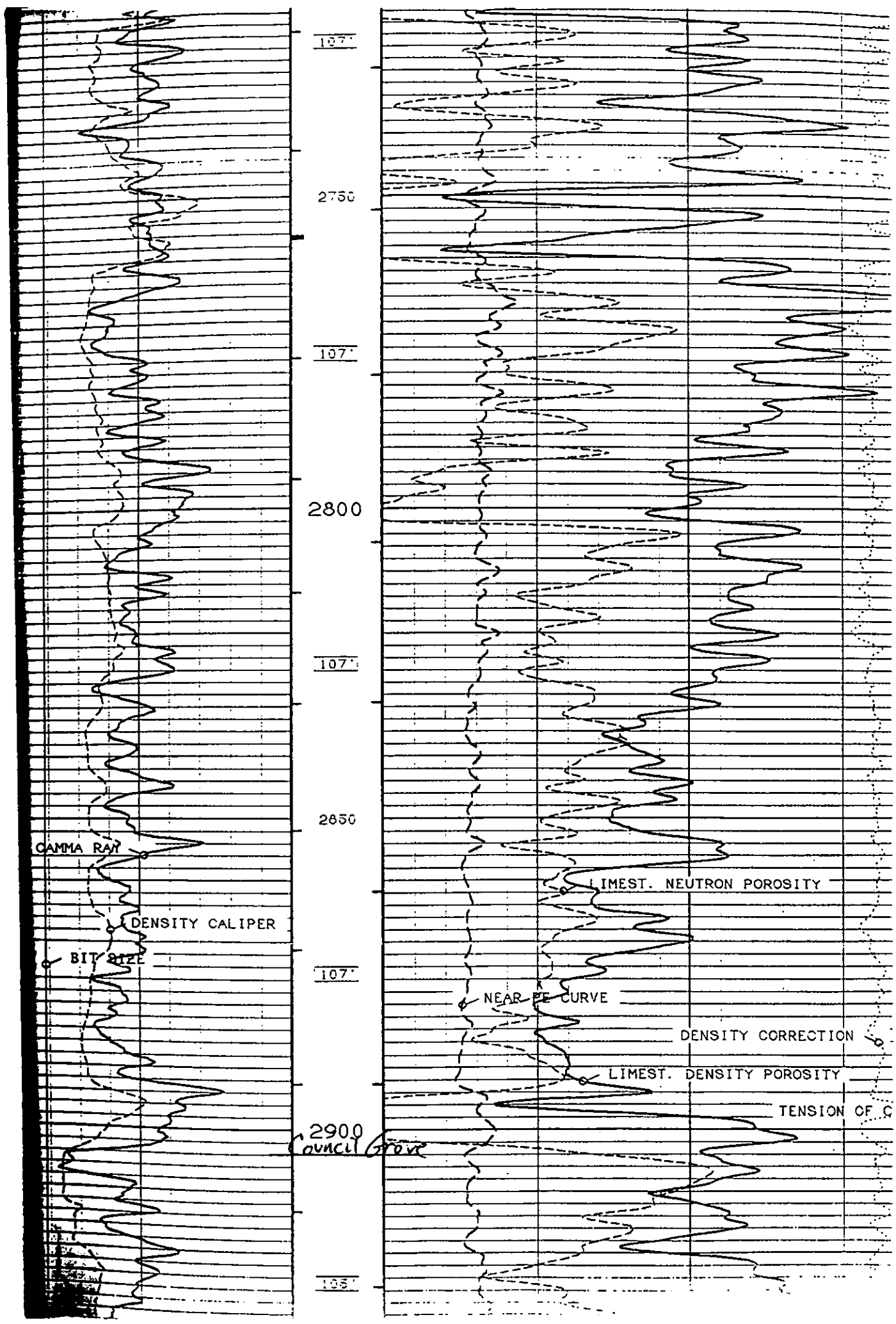
SH - CY BLK I-YCN FRM F CARB SLTY IP INTED W/

LS - BRN TO CY MOT BRN F XL DNS CLN TO ARG P VIS Ø NO SHOW

LS - M TO DK BRN LT CY F XL BRIT CLN TO ARG V W ISRTD CRS TR ISOW FLOR NO STN OR CUT

SH - DK CY TO BRN OCC BLKY CALC SLTY UBTRN

LS - MOT BRN TO CY F CRPYL HD DNS CLN TO SHLY N SLOW



107'

2750

107'

2800

107'

2650

107'

2900
Council Grove

105'

GAMMA RAY

DENSITY CALIPER

BIT SIZE

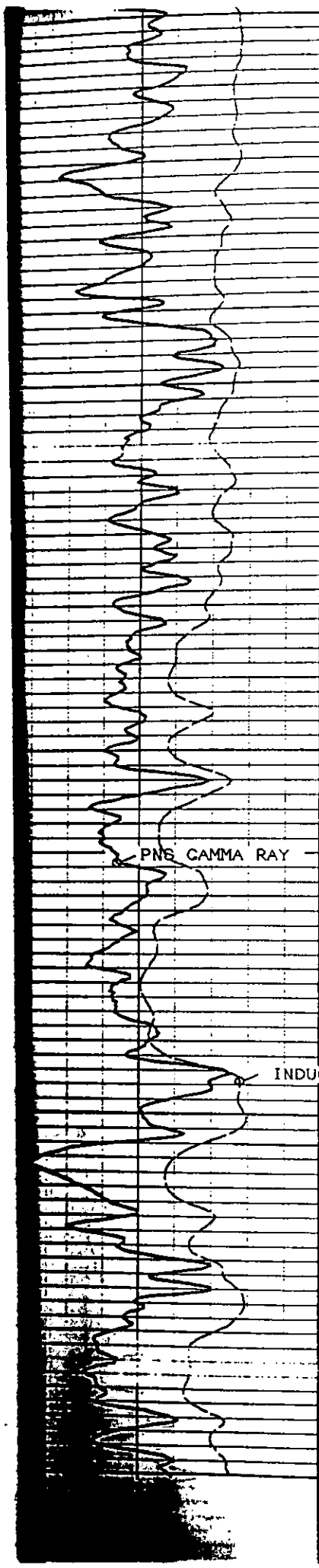
LIMEST. NEUTRON POROSITY

NEAR-EE CURVE

DENSITY CORRECTION

LIMEST. DENSITY POROSITY

TENSION OF C



2750

108'

2800

108'

2850

108'

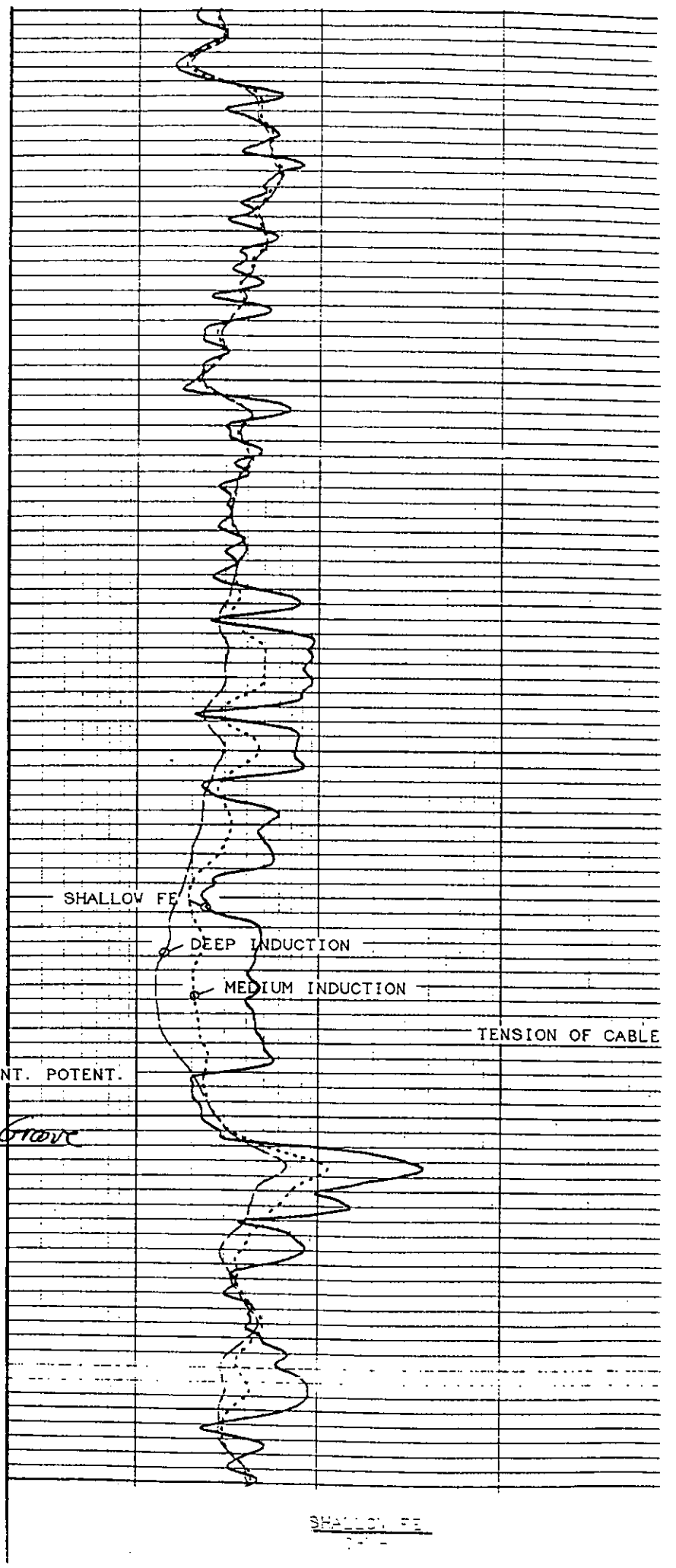
2900
Council Grove

108'

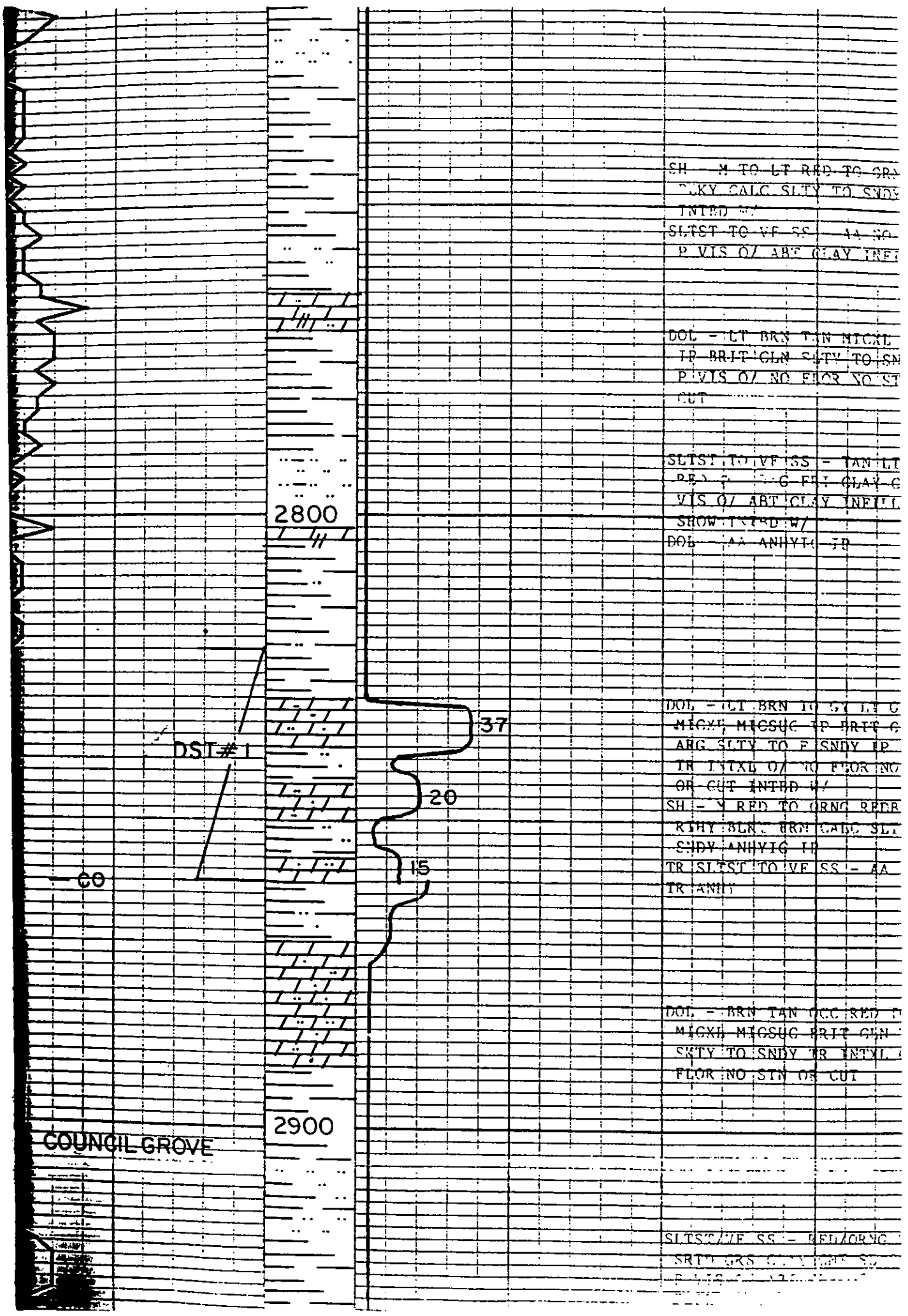
2950

DEPTH IN FEET

1240



SHALLOW FE



SH - M TO LT RED TO GRN
 BKY CALC SILTY TO SNDR
 INTD W/
 SLTST TO VF SS - AA NO
 P VIS O/ ABT CLAY INF

DOL - LT BRN TAN MICX
 TP BRIT GLN SILTY TO SN
 P VIS O/ NO FLOR NO ST
 CUT

SLTST TO VF SS - TAN LT
 P VIS O/ ABT CLAY INF
 SHOW INTD W/
 DOL - AA ANHYD - 50

2800

DST # 1

37

20

15

DOL - LT BRN TO GR LT G
 MICX MICXUC TP BRIT G
 ARG SILTY TO F SNDR TP
 TR INTD O/ NO FLORING
 OR CUT INTD W/
 SH - M RED TO ORNG REFR
 RTHY BLK. BROG ABC SLT
 SNDR ANHYG ID
 TR SLTST TO VF SS - AA
 TR ANHY

60

DOL - BRN TAN OCC RED T
 MICX MICXUC BRIT GLN
 SILTY TO SNDR TR INTD
 FLOR NO STN OR CUT

2900

COUNCIL GROVE

SLTST/VF SS - BEL/CRNG
 SRD GRS C. V. L. S. 2
 P. VIS O/ ABT CLAY INF

clean, slightly arkosic and glauconitic, occasionally poorly consolidated and very friable with fair intergranular porosity, no fluorescence, no stain or cut, with trace unconsolidated Quartz grains - Clear, white, very coarse lower to medium lower, poorly sorted, subangular grains, no fluorescence, no stain or cut

5146 - 5160' Shale - Black, occasionally graygreen to tan, hard, subfissile, carbonaceous, waxy in part

LOWER MORROW 5166'

5160 - 5190' Limestone(Grainstone) -Mottled brown to graygreen, speckled green dark brown, biomicrite, finely crystalline, dense, clean to argillaceous, oolitic, sand and glauconitic in part, poor visible porosity, dark mottled orange mineral fluorescence, no stain or cut, interbedded with Shale - Medium to dark gray, graygreen black, hard, subfissile, carbonaceous, calcareous, waxy, sandy and glauconitic in part

5190 - 5214' Shale - Dark gray, black, dark brown, occasionally graygreen, block to subfissile, carbonaceous, calcareous, interbedded with Limestone - As above, no show, trace Chert

5214 - 5226' Limestone - Medium to dark mottled brown, gray, occasionally black biomicrite, cryptocrystalline, dense, hard, siliceous, argillaceous to marly, fossiliferous, carbonaceous, tight, no show

5226 - 5240' Trace Sandstone(6% Spl) - Light graygreen, salt and pepper, speckled green, hard, dense, slightly friable, fine lower, well sorted, subround grains, calcite cement, glauconitic, clean, poor visible porosity, no fluorescence, no stain or cut, interbedded with Limestone - Medium to dark mottled brown, biomicrite, cryptocrystalline, dense, clean to argillaceous, sandy and glauconitic in part, poor visible porosity, no fluorescence, no stain or cut

5240 - 5265' Shale - Black, dark gray to mottled brown, occasionally greengray, fissile to blocky, hard, calcareous, silty, glauconitic in part, interbedded with Limestone - As above, sandy and glauconitic in part, no fluorescence, no stain or cut

4265 - 4290' Trace Sandstone - As above, very glauconitic in part, trace coarse angular and very well cement, no visible porosity, no show, interbedded with Shale and Limestone - As above

MISSISSIPPI 5315'

5290 - 5315'TD Limestone(Grainstone) - Light brown, buff, microcrystalline, microarkosic, subchalky, clean, brittle, very oolitic and sandy, pyritic, poor visible porosity, no fluorescence, no stain or cut

4900 - 4940' Shale - Dark gray, black, hard, subfissile to blocky, carbonaceous, calcareous, silty, interbedded with Limestone - Medium to dark brown to gray, occasionally black, mottled, micrite, cryptocrystalline, hard, dense, fossiliferous, argillaceous to marly, tight, no show, trace Chert - Dark brown, black, hard, crystalline, pyritic

4940 - 4950' Limestone - Dark brown to gray, mottled, black, biomicrite, cryptocrystalline, hard, dense, argillaceous to marly, fossiliferous, pyritic, tight, no show

4950 - 5010' Limestone - Dark brown to gray, black, micrite, cryptocrystalline, dense, argillaceous to marly, pyritic, carbonaceous, tight, no show, interbedded with Shale - As above

5010 - 5026' Limestone - Dark brown, black, micrite, cryptocrystalline, hard, dense, siliceous, marly, tight, no show

5026 - 5038' Limestone - Dark gray to brown, black, biomicrite, cryptocrystalline, hard, dense, marly, very pyritic in part, fossiliferous, tight, no fluorescence, no stain or cut, interbedded with Shale - Black, dark gray, hard, subfissile to blocky, carbonaceous, calcareous, trace Chert - Black

MORROW 5052'

5043 - 5052' Shale - Black, firm, fissile, carbonaceous, calcareous

5052 - 5065' Shale - Black, dark gray, hard, blocky to subfissile, carbonaceous, calcareous, with Limestone - Medium brown to gray, micrite, finely crystalline, dense, argillaceous to marly, fossiliferous, tight, no fluorescence, no stain or cut, trace Chert - Brown, white

5065 - 5120' Shale - Black, fissile, firm, carbonaceous, calcareous, silty

5120 - 5132' Shale - Dark gray, black, subfissile, firm, waxy, calcareous, carbonaceous, trace Limestone inclusions, trace unconsolidated Quartz grains(1% sample) - White, clear, medium upper to fine lower, poorly sorted, subangular grains no fluorescence, no stain or cut

MORROW "V-6" SANDSTONE 5123'

5132 - 5146' Sandstone(5% sample) - White, clear, occasionally light yellow to orange and varicolored, friable in part, predominately hard and dense, very coarse upper to fine lower, poorly sorted, subangular grains, occasionally medium upper to fine lower and moderately sorted, very well cemented in part with calcite cement,

5584 - 5598' Limestone - Medium brown to gray, micrite, cryptocrystalline, hard, dense, siliceous, argillaceous to marly, pyritic, fossiliferous, carbonaceous, tight, no show, interbedded with Shale - Dark brown, black, hard, blocky, calcareous, carbonaceous

5598 - 4646' Limestone - Medium to dark mottled brown, biomicrite, finely crystalline, hard, dense, fossiliferous, carbonaceous, pyritic, poor visible porosity, no fluorescence, no stain or cut with Shale - Dark brown, black, subfissile to blocky, hard, calcareous, carbonaceous

4646 - 4670' Limestone - Light mottled gray, finely crystalline, dense, siliceous, light gray Chert nodules, clean, fossiliferous, trace intercrystalline porosity, light mottled blue/gold hydrocarbon fluorescence in 2% of the samples, slow faint streamer cut, no stain, interbedded with Limestone - Medium mottled brown, oomicrite, cryptocrystalline, hard, dense, carbonaceous, pyritic, tight, no show, trace Chert

4670 - 4698' Limestone - Mottled brown to gray, oomicrite, cryptocrystalline, dense, argillaceous, fossiliferous, oolitic, pyritic, tight, no show, trace Chert - Black to dark gray

SHEROKEE 4690'

4698 - 4722' Shale - Black, dark gray, fissile to blocky, hard, carbonaceous, calcareous, silty, interbedded with Limestone - Medium to dark mottled brown, biomicrite, cryptocrystalline, hard, dense, clean to marly, oolitic, pyritic, tight, occasional trace pale blue hydrocarbon fluorescence, faint cut, no stain, weak show

4722 - 4752' Shale - Black, dark gray, hard, blocky, calcareous, carbonaceous, silty, pyritic, interbedded with Limestone - Mottled brown to gray, biomicrite, finely crystalline, dense, fossiliferous, carbonaceous, pyritic, tight, no show, trace Chert

4752 - 4805' Shale - Black, dark gray, subfissile to blocky, hard, carbonaceous, calcareous, silty, interbedded with Limestone - Medium to dark brown, biomicrite, finely crystalline, dense, clean to argillaceous, fossiliferous, tight, no show

4805 - 4845' Limestone - Medium mottled brown, dark brown, occasionally black, hard, biomicrite, cryptocrystalline, dense, argillaceous to marly, silty, tight, no fluorescence, no stain or cut, interbedded with Shale - Black, dark brown to gray, hard, blocky, calcareous, carbonaceous, silty, Chert - Gray, black, hard, crystalline

ATOKA 4891'

4845 - 4900' Shale - Black, dark gray, fissile to blocky, hard, carbonaceous, interbedded with Limestone - Dark brown to gray, black, cryptocrystalline, hard, dense, argillaceous to marly, silty, fossiliferous, pyritic, tight, no show

4380 - 4390' Shale - Black, dark gray, subfissile, hard, carbonaceous, silty, interbedded with Limestone - Light brown, gray, microcrystalline, subchalky, clean, oolitic, fossiliferous, poor visible porosity, no fluorescence, no stain or cut

4390 - 4414' Limestone - Medium mottled brown to gray, microcrystalline, microsugrosic, brittle, argillaceous, pyritic, trace intercrystalline porosity, trace fine vuggy porosity, no show, interbedded with Shale - As above

4414 - 4440' Limestone - Medium brown to gray, mottled, micrite, micro to cryptocrystalline, dense, siliceous, clean to argillaceous, fossiliferous, pyritic, poor visible porosity, no fluorescence, no stain or cut, occasionally interbedded with Shale - Black, dark gray, fissile, firm, carbonaceous, trace Chert - Milky gray

MARMATON 4448'

4440 - 4449' Shale - Dark gray, hard, blocky, calcareous, pyritic

4449 - 4486' Limestone - Medium mottled brown, biomicrite, cryptocrystalline, hard, dense, siliceous, fossiliferous, oolitic, pyritic, clean to argillaceous, tight, no show, trace Chert

4486 - 4492' Limestone - Light to dark mottled brown, buff, microcrystalline, microsugrosic, brittle, clean to argillaceous, subchalky, pyritic, fossiliferous with trace moldic porosity, trace intercrystalline porosity, no fluorescence, no stain or cut

4492 - 4512' Limestone - Medium to dark mottled brown to gray, biomicrite, cryptocrystalline, hard, dense, siliceous, argillaceous to marly in part, fossiliferous, carbonaceous, pyritic, tight, no show, trace Chert - Dark milky gray, occasionally interbedded with Shale - Dark gray, hard, blocky

4512 - 4530' Limestone - Medium gray, finely crystalline, dense, very sandy with very fine well sorted Quartz grains, fossiliferous, tight, no show, interbedded with Limestone - Medium brown, oomicrite, microcrystalline, brittle, very oolitic and fossiliferous, trace moldic porosity, no fluorescence, no stain or cut

4530 - 4542' Shale - Dark gray to brown, graygreen, black, hard, blocky, calcareous, silty, carbonaceous

4542 - 4584' *Abundant Chert - Milky gray to brown, white, hard, crystalline, Limestone - Light mottled brown, oomicrite, microcrystalline, brittle, clean to argillaceous, pyritic, very oolitic and fossiliferous with trace moldic porosity, trace intercrystalline porosity, trace pale blue hydrocarbon fluorescence(1% sample), slow weak cut, no stain, trace Chert

- 4160 - 4174' Limestone - Gray to brown, mottled, microcrystalline, silty, argillaceous to marly, carbonaceous, tight, no show
- 4174 - 4190' Limestone - Medium mottled brown to gray, micrite, cryptocrystalline, hard, dense, clean to argillaceous, fossiliferous, carbonaceous, pyritic, tight, no show, with Chert
- 4190 - 4230' Shale - Medium to dark gray, brown, black, blocky, calcareous, carbonaceous, silty, pyritic, interbedded with Limestone - Medium to dark mottled brown, gray, biomicrite, cryptocrystalline, hard, dense, fossiliferous, pyritic, argillaceous to marly in part, tight, no show
- 4230 - 4242' Limestone - Medium mottled brown, biomicrite, microcrystalline, pyritic, brittle, clean to argillaceous, very fossiliferous with trace moldic and intercrystalline porosity, no fluorescence, no stain or cut
- 4242 - 4262' Limestone - Medium to dark mottled brown to gray, biomicrite, cryptocrystalline, hard, dense, siliceous, argillaceous, fossiliferous, carbonaceous, poor visible porosity, no fluorescence, no stain or cut, interbedded with Shale - Dark gray, hard, blocky, calcareous, trace Chert
- 4262 - 4274' Limestone - Light to medium mottled brown, oomicrite, microcrystalline, brittle, clean, sandy, very oolitic with excellent oomoldic porosity, trace intercrystalline porosity, no fluorescence, no stain or cut, trace chert
- 4274 - 4300' Limestone - Mottled brown to gray, biomicrite, finely crystalline, hard, dense, clean to argillaceous, carbonaceous, tight, no fluorescence, no stain or cut, interbedded with Shale - Black, dark gray, hard, subfissile to blocky, calcareous, silty, carbonaceous
- 4300 - 4336' Limestone - Light to medium brown to gray, biomicrite, cryptocrystalline, hard, dense, clean to argillaceous, poor visible porosity, no show, interbedded with Shale - Dark gray, black, subfissile, carbonaceous, silty
- 4336 - 4350' Shale - Dark gray, black, firm, subfissile to blocky, carbonaceous, calcareous, silty
- 4350 - 4380' Limestone - Dark to medium brown to gray, oobiomicrite, cryptocrystalline, hard, dense, argillaceous to marly in part, fossiliferous, carbonaceous, tight, no fluorescence, no stain or cut, interbedded with Shale - As above

3855 - 3902' Limestone - White, light brown, sucrosic to granular in part, brittle, clean, very fossiliferous with excellent interparticle porosity, fair intercrystalline and moldic porosity, orange mineral fluorescence, no stain or cut, interbedded with Shale - As above

3902 - 3928' Shale - Dark gray to brown, black, hard, blocky, calcareous, silty, Interbedded with Limestone - Mottled brown to gray, biomicrite, cryptocrystalline, hard dense, clean to argillaceous, oolitic, siliceous, tight, no show

3928 - 3938' Limestone - Brown to gray, micrite, finely crystalline, dense to trace intercrystalline porosity, argillaceous to marly in part, pyritic, no show

HEEBNER 3938'

3938 - 3942' Shale - Black, hard, fissile, carbonaceous, calcareous, silty

3942 - 3998' Limestone - Medium to dark mottled brown to gray, biomicrite, cryptocrystalline, hard, dense, argillaceous to marly in part, tight, no show, Interbedded with Shale - Black, hard, subfissile to blocky, carbonaceous, silty

3998 - 4025' Limestone - Dark to medium mottled brown, biomicrite, cryptocrystalline to microcrystalline, dense, argillaceous to marly, pyritic, carbonaceous, stylonitic, fossiliferous, tight, no show, interbedded with Shale - Black, subfissile, carbonaceous

LANSING 4023'

4025 - 4050' Shale - Dark gray to brown, black, hard, subfissile to blocky, carbonaceous, calcareous, fossiliferous, pyritic, interbedded with Limestone - Dark brown to gray, finely crystalline, marly, tight, no show

4050 - 4070' Limestone - Light to medium brown to gray, micrite, cryptocrystalline, hard, dense, siliceous, clean to argillaceous, fossiliferous, tight, no show, with Chert - Gray, milky white, hard, crystalline

4070 - 4102' Limestone - As above, with Chert Nodules, interbedded with Shale - Dark gray, brown, mottled, hard, blocky, calcareous, carbonaceous, fossiliferous, pyritic, abundant Chert

4102 - 4124' Limestone - Light gray to brown, micrite, microcrystalline, firm, brittle, subchalky, clean to argillaceous, fossiliferous, trace intercrystalline porosity no fluorescence, no stain or cut, with Chert - Milky gray to white, hard, crystalline

4124 - 4160' Limestone - Medium brown, micrite, cryptocrystalline, hard, dense, clean, siliceous, fossiliferous, tight, no show

3584 - 3636' Limestone - Light to medium brown to gray, occasionally mottled green, maroon, redbrown, varicolored in part, micrite, crypto to microcrystalline, dense, clean to marly in part, subchalky in part, occasionally siliceous and tight, poor visible porosity, no show, interbedded with Shale - Brick red, graygreen, maroon, violet, varicolored in part, hard, blocky, calcareous, silty, trace Chert - Gray, milky

3636 - 3680' Limestone - Light to medium brown to gray, buff, mottled red, micrite, finely crystalline, dense, fossiliferous, siliceous, carbonaceous, poor visible porosity, no show, interbedded with Shale - As above

3680 - 3700' Shale - Medium graygreen to gray, redbrown, hard, blocky, calcareous, silty, interbedded with Limestone - Mottled brown to gray, white, micrite, finely crystalline, oolitic, fossiliferous, carbonaceous, poor visible porosity, no show

SHAWNEE 3730'

3700 - 3751' Limestone - Mottled brown to gray, biomicrite, finely crystalline, dense, fossiliferous, carbonaceous, argillaceous to clean, poor visible porosity, no fluorescence, no stain or cut, interbedded with Shale - As above

3751 - 3780' 16/20 Units gas, *Limestone - Light to medium brown, micrite, microcrystalline, microsugrosic to sugrosic, brittle, clean to argillaceous in part, trace to fair intercrystalline porosity, trace vuggy porosity, pale yellow to blue hydrocarbon fluorescence in 8% of the samples, fair streaming cut, trace light oil stain, interbedded with Shale - Light to medium brown, gray to graygreen, black, soft, brittle, calcareous, silty

3784 - 3806' Limestone - Light brown, buff, white, microcrystalline, microsugrosic to sugrosic in part, clean, brittle, subchalky, fossiliferous, fair intercrystalline and occasional moldic porosity, no fluorescence, no stain or cut

3806 - 3826' Shale - Dark gray, black, graygreen, redbrown, hard, blocky, calcareous, silty

3826 - 3855' *Limestone - Light brown to gray, white, biomicrite, microcrystalline, microsugrosic, brittle, clean, very fossiliferous with occasional moldic porosity, fair intercrystalline porosity, trace (1% sample) light yellow hydrocarbon fluorescence with faint cut, no stain, weak show, interbedded with Limestone - Brown to gray, micrite, cryptocrystalline, dense, fossiliferous, argillaceous, tight, no show

3855 - 3885' Shale - Gray to black, graygreen, fissile, firm, calcareous, carbonaceous, silty in part, interbedded with Limestone - Brown to gray, mottled, biomicrite, finely crystalline, dense, clean to argillaceous, fossiliferous, oolitic, tight to trace moldic and intercrystalline porosity, no fluorescence, no stain or cut

3280 - 3302' Limestone - Light brown, buff, white, microcrystalline, microsucrosic, subchalky in part, clean, brittle, fossiliferous, oolitic, trace intercrystalline porosity, no fluorescence, no stain or cut

3302 - 3340' Shale - Medium gray to graygreen, maroon, redbrown, blocky, earthy, calcareous, silty, interbedded with Limestone - Brown to gray, white, finely crystalline, dense, clean, fossiliferous, tight, no show, trace Chert

FORAKER 3346'

3340 - 3365' Limestone - Medium mottled brown to gray, biomicrite, microcrystalline, dense, clean to argillaceous, fossiliferous, trace intercrystalline and moldic porosity, no fluorescence, no stain or cut, interbedded with Shale - As above, trace Chert

3365 - 3380' Shale - Red to orangebrown, graygreen, mottled, hard, blocky, calcareous, silty

3380 - 3392' Limestone - Medium brown to gray, oomicrite, finely crystalline, brittle, clean to argillaceous, trace intercrystalline and oomoldic porosity, no show

ADMIRE SHALE 3397'

3392 - 3426' Shale - Brick red to orangebrown, graygreen, medium brown, hard, blocky, earthy, calcareous, silty, interbedded with Limestone - As above, no fluorescence, no stain or cut

3426 - 3454' Limestone - Light brown, buff, microcrystalline, microsucrosic, brittle, clean to argillaceous, fossiliferous, trace intercrystalline porosity, no fluorescence, no stain or cut

VIRGIL 3458'

3454 - 3490' Shale - Brick redbrown, graygreen, mottled in part, hard, blocky, calcareous, silty, interbedded with Limestone - Medium to light brown, white, micrite, finely crystalline, dense, clean, sandy, fossiliferous, tight, no show

3490 - 3560' Shale - Medium to dark redbrown to brown, graygreen, hard, blocky, earthy, calcareous, silty, interbedded with Limestone - Light to medium brown, gray, micrite, finely crystalline, dense, clean to argillaceous, sandy, poor visible porosity, no fluorescence, no stain or cut

3560 - 3584' Shale with interbedded Limestone - As above, poor visible porosity, no show

2860 - 2888' Shale - Medium red to orangebrown, fissile to blocky, waxy in part, earthy, calcareous, silty, occasionally grading to and interbedded with Siltstone - Light gray, graygreen, white, brown, firm, slightly friable, calcite and clay cement, trace intergranular porosity - abundant clay infill, no fluorescence, no stain or cut, with Dolomite - As above

2888 - 2984' Limestone - Light brown, tan, white, micrite, cryptocrystalline, fossiliferous, sandy, tight, no show, interbedded with Shale - Medium redbrown, orangebrown, blocky, earthy, calcareous, silty, interbedded with Siltstone - Light gray, graygreen, hard, dense, slightly friable, calcite and clay cement, clean to argillaceous, poor visible porosity, no fluorescence, no stain or cut

COUNCIL GROVE 2904'

2984 - 2995' Limestone - Light to medium brown, redbrown to red, tan, micrite, cryptocrystalline, hard, dense, siliceous in part, clean to argillaceous, silty, anhydritic, tight, no show, trace Chert - Mottled red to brown, hard, crystalline

2995 - 3020' Shale - Medium redbrown to orangebrown, occasionally graygreen, hard, blocky, calcareous, silty to sandy in part and occasionally grading to Siltstone - poor visible porosity, no show

3020 - 3030' Siltstone to very fine Sandstone - Light gray to graygreen, redbrown, hard, slightly friable, clay cement, calcareous, poor visible porosity, no show

3030 - 3104' Shale - As above, grading to and interbedded with Siltstone to very fine Sandstone - As above, clay cement, calcareous, poor visible porosity - abundant clay infill, no fluorescence, no stain or cut

3104 - 3190' Shale - Medium red to orangebrown, graygreen, hard, blocky, earthy, calcareous, silty and grading to Siltstone/very fine Sandstone - Medium redbrown, light gray to graygreen, tan, hard, slightly friable, very fine, well sorted grains, clay cement, calcareous, poor visible porosity - abundant infill, no show

NEVA 3201'

3190 - 3203' Limestone - Mottled redbrown, light to medium brown, buff, orange, varicolored in part, micrite, cryptocrystalline, dense, clean to argillaceous in part, poor visible porosity, no fluorescence, no stain or cut, poor sample quality - cavings

3203 - 3280' Shale - Medium to dark redbrown to brown, green to graygreen, hard, blocky, earthy, calcareous, silty to sandy, interbedded with Limestone - As above, mottled red to brown, orange, buff, poor visible porosity, no show

2490 - 2525' Shale - Medium to dark redbrown to brown, hard, blocky, calcareous, silty, trace Anhydrite, with interbedded Siltstone - Red to orangebrown, firm, clay and calcareous cement, poor visible porosity - abundant clay infill, no show

2525 - 2582' Shale - Medium to dark red to orangebrown, hard, blocky, earthy, calcareous, very silty and occasionally grading to Siltstone - Clay cement, poor visible porosity - clay infill, no show

2582 - 2606' Shale - Red to orangebrown, earthy, blocky, calcareous, silty

2606 - 2654' Shale - As above, occasionally graygreen and waxy, interbedded with Siltstone to very fine Sandstone - Light brown to gray, tan, white, redbrown, firm, friable, clay cement, calcareous, clean in part, poor visible porosity, no show, trace Anhydrite

CHASE 2638'

2654 - 2692' Shale - Dark redbrown, orange, occasionally graygreen to green, waxy in part, blocky, calcareous, earthy, silty, occasionally interbedded with Siltstone - Light gray, tan, redbrown, firm, slightly friable, clay cement, calcareous, anhydritic in part, poor visible porosity, no show

2692 - 2710' Siltstone to very fine Sandstone - White, light brown, friable, very fine, well sorted grains, clay and calcareous cement, clean to argillaceous, anhydritic in part, trace intergranular porosity - abundant clay infill, no show, trace Dolomite - Light brown, pink, orange, cryptocrystalline, hard, dense, anhydritic, no show, with Shale - As above

2710 - 2752' Shale - Medium red to orangebrown, firm, earthy, fissile, waxy, calcareous, silty in part and occasionally grading to Siltstone - As above, trace Dolomite - Light brown to light graygreen, hard, finely crystalline, silty, anhydritic, poor visible porosity, no show

2752 - 2830' Shale - As above, occasionally interbedded with Siltstone to very fine Sandstone - Light brown to redbrown, tan, white, clay cement, calcareous, anhydritic in part, tight, no show, with trace Dolomite - As above

2830 - 2860' *35 Units Gas, Dolomite - Light brown to gray, tan, white, occasionally red to orange, microcrystalline, microsugrosic in part, clean to argillaceous, brittle, silty to sandy in part, fossiliferous, poor visible porosity, no fluorescence, no stain or cut, interbedded with Siltstone - Light brown, white, friable, clean, trace intergranular porosity, no show, interbedded with Shale - As above

STRUCTURAL CONSIDERATION - Datum Depths

<u>FORMATION</u>	<u>* Siverson NO. 1-X</u>	<u>No. 14-1 Danielle</u>	<u>POSITION</u>
Base Stone Corral	+1309'	+1311'	+2'
Chase	+1118'	+1117'	-1'
Council Grove	+855'	+851'	-4'
Neva	+556'	+554'	-2'
Foraker	+412'	+409'	-3'
Admire	+359'	+358'	-1'
Virgil	+298'	+297'	-1'
Heebner	-186'	-183'	+3'
Lansing	-272'	-268'	+4'
Marmaton	-684'	-693'	-9'
Cherokee	-932'	-935'	-3'
Atoka	-1131'	-1136'	-5'
Morrow	-1290'	-1297'	-7'
Morrow "V-6" SS	-1372'	-1368'	+4'
Lower Morrow	-1398'	-1411'	-13'
Mississippi	-1512'	-1539'	-28'

*Western Operating Co., Siverson No. 1X, Section 23, 20S, 42W - 4220' to the South, KB Elevation 3750'.

LITHOLOGY DESCRIPTION

SAMPLES ARE LAGGED

*INDICATES HYDROCARBON SHOW

CORRECTED E-LOG FORMATION TOPS

STONE CORRAL 2430'

2420 - 2443' Anhydrite - White, light gray to tan, firm, crystalline

BASE STONE CORRAL/RED CAVE 2443'

2438 - 2490' Siltstone to very fine Sandstone - Red to orange, very fine, well sorted, unconsolidated grains, no fluorescence, no stain or cut, poorly consolidated in part with clay cement, poor visible porosity, no show, with abundant unconsolidated grains, interbedded with Shale - Medium redbrown to brown, orange, earthy, blocky, silty, calcareous, anhydritic in part, with trace Anhydrite

DST No. 2(5028' - 5163'), Morrow Fm.,
Type: Conventional Bottom Hole, Times 15 - 30 - 60 - 90

<u>Period</u>	<u>PSI</u>
IH	2613
IF	53 - 63
ISI	124
FF	63 - 89
FSI	139
FH	2441

BHT 128°F

Blows: IF - Slowly built to 1 1/2"

FF - 3/4" throughout

Recovery: 30' of mud. Sample chamber - 110 PSI, 4000 ml mud - no show

No problems occurred during test.

ELECTIC LOG FORMATION TOPS - KB Elev. 3755'

<u>FORMATION</u>	<u>DEPTH</u>	<u>DATUM</u>
Base Stone Corral	2444'	+1311'
Chase	2638'	+1117'
Council Grove	2904'	+851'
Neva	3201'	+554'
Foraker	3346'	+409'
Admire	3397'	+358'
Penn. Virgil	3458'	+297'
Shawnee	3730'	+25'
Heebner	3938'	-183'
Lansing	4023'	-268'
Marmaton	4448'	-693'
Cherokee	4690'	-935'
Atoka	4891'	-1136'
Morrow	5052'	-1297'
Morrow "V-6" SS	5123'	-1368'
Lower Morrow	5166'	-1411'
Mississippi	5294'	-1539'
TD	5315'	-1560'

BIT RECORD

<u>NO.</u>	<u>MAKE</u>	<u>TYPE</u>	<u>SIZE</u>	<u>OUT</u>	<u>FOOTAGE</u>	<u>HOUR</u>
1	HTC	OS3AD	1 7/8"	535'	535'	10 1/2
2	HTC	GTO3	7 7/8"	2412'	1876'	24
3	HTC	ATJ20C	7 7/8"	5166'	2751'	101 3/4
4	HTC	GT20CRR	7 7/8"	5315'	149'	9

Total Rotary hours: 145 1/4
Average: 36.6 ft/hr

DEVIATION RECORD

136' 1/2°, 353' 3/4°, 536' 1 1/4°, 1759' 3/4°, 2412' 1°, 3165' 1/4°,
3667' 1/4°, 4321' 1/4°, 5163' 1/4°, 5315' 3/4°

DRILLSTEM TEST DATA

DST No.1 (2822' - 2860'), Chase Fm.

Type: Conventional Bottom Hole, Times 15 - 30 - 60 - 90

<u>Period</u>	<u>PSI</u>
IH	1522
IF	28 -35
ISI	587
FF	40 - 61
FSI	605
FH	1361

BHT 93°F

Blows: IF - Opened weak and intermittently built to 2 1/2".

FF - Built to 1 1/2" and died back to 1/2".

Recovery: 60' of drilling mud. Sample chamber - 360 PSI, 4000 ml mud - no show.

Comments: No problems occurred during test. Charts were clean.

- 2860'), Chase Formation. Run test and trip tool. Trip in and circulate and wash to bottom and drill to 2945'.

11/23	3615'	670'	Drill to 3615'. Run survey(1/4 ^o). Jet pits and service rig.
11/24	4258'	643'	Drill to 4258'. Run survey(1/4 ^o). Put extension on flowline and jet pits. Service mud pump. Displace mud system at 3820'.
11/25	4727'	469'	Drill to 4727'. Run survey(1/4 ^o) and service rig and jet pits.
11/26	5163'	436'	Circulate for samples at 5101' and 5163'. Short trip 10 stands and circulate.
11/27	5290'	127'	Circulate and condition mud. Drop survey(1/4 ^o) and strap out for DST No. 2(5028' - 5163'), Morrow Formation - 4' downhole correction. Run test and lay down tool. Trip in with Bit No. 4 and drill to 5290'.
11/28'	5315'TD	25'	Drill to 5315'TD and circulate. Trip out for logs and run E-Logs. Tool bridged out at 519'. Trip in and ream and circulate 519' to 570'. Trip out and log. Pulled very tight off bottom. Wait on orders. Lay down collars and trip to bottom open ended and circulate. Trip out laying down.
11/29	TD		Run and cement 4 1/2" casing for Chase gas production.

MUD PROPERTIES

<u>DATE</u>	<u>DEPTH</u>	<u>WT</u>	<u>VIS</u>	<u>YP</u>	<u>WL</u>	<u>PH</u>	<u>CL/PPM</u>
11/19	353'	9.7	38	16	N/C	7.0	200
11/20	1752'	9.0	30	5	N/C	7.0	200
11/22	2814'	9.7	34	8	N/C	7.0	96000
11/23	3133'	9.6	32	12	N/C	7.0	68000
11/24	3855'	8.6	53	22	9.6	10.0	7000
11/25	4427'	9.1	51	19	8.8	9.5	4000
11/26	4933'	9.2	49	19	8.0	9.0	4000
11/27	5163'	9.3	56	23	9.6	9.0	5000
11/28	5315'	9.3	49	20	9.6	9.0	5000

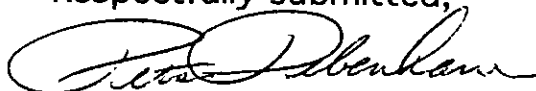
Note: 1 - 3 Lbs/bbl LCM run to TD,

grains, calcite cement, slightly glauconitic and arkosic, pyritic, trace to occasional fair intergranular porosity, no fluorescence, no stain or cut.

This interval was drillstem tested(5028' - 5163') and recovered 30' of drilling mud.

4 1/2" production casing was run to production test the Chase Formation(2828' - 2866') on 11/29/98.

Respectfully submitted,



Peter Debenham

WELL CHRONOLOGY

<u>DATE</u>	<u>MIDNIGHT DEPTH</u>	<u>FOOTAGE</u>	<u>RIG ACTIVITY</u>
11/18	40'	40'	Move to location and rig up rotary tools. Mix spud mud. Drill rathole and mousehole. Spud in 1 7/8" surface hole and drill to 40'. Check pump valves.
11/19	535'	495'	Drill to 340' and trip out. Change out jets in bit. Pick up drill collars, trip in and drill to 535'. Run wiper trip and circulate. Drop survey(1 1/4 ^o) and trip out for surface casing. Run 12 joints of 13 3/8" surface casing set at 535' and cement. Plug down 5:30 PM. Cement did circulate to surface. Wait on cement.
11/20	1256'	721'	Wait on cement. Back off landing joint and nipple up BOP. Trip in hole and test same - flange leaking. Tighten flange and pressure test BOP to 800 PSI for 30 minutes. Drill cement and plug and drill new 7 7/8" hole to 1256'.
11/21	2412'	1156'	Drill to 2412' with weighted mud for the Glorietta (9.0/9.6 Lbs/gal). Air out mud pump and test BOP. circulate and drop survey(1 ^o) and trip out for Bit No. 3.
11/22	2945'	533'	Drill to 2860' and circulate for samples. Short trip and circulate and condition mud. Trip out for DST No. 1(2822'

ELECTRIC LOGS: BPB Logging - Liberal, Kansas, Engineer Matt Fenn, 1) Array Induction 2) Compensated Neutron/Density

STATUS: 4 1/2" production casing run 11/29/98 for Chase gas production(2828' - 2866').

WELL SUMMARY

The Western Operating Company, No. 14-1 Danielle was drilled to a total depth of 5315' in the Mississippi with no unusual problems. No nitrogen gas was documented in the Cedar Hills and no lost circulation occurred. E-Logs bridged out at 519' and necessitated tripping in and reaming. Pulling tight occurred on bottom while logging.

The nearest well control to the Mississippi was the Western Operating Company, Siverson No.1-X, 4220' to the South. This well tested gas productive in the Morrow "V-6" Sandstone. The base of the Stone Corral came in 2' high relative to this offset. Formation tops from the Chase to the Shawnee ran 1' to 4' low. The Heebner and Lansi ran 3' and 4' high. Thickening occurred and the Cherokee, Atoka and Morrow ran 3', 5' and 7' low respectively. Further thickening occurred and the Lower Morrow and Mississippi came in 13' and 28' low.

Several 15 to 37 Unit gas increases occurred on the hotwire in the Chase from 2828' to 2866' and consists of a Dolomite - Light brown to gray, light graygreen, microcrystalline, microsucrosic, brittle, clean to argillaceous, silty to finely sandy part, anhydritic, trace intercrystalline porosity, no fluorescence, no stain or cut, interbedded with Shale - Medium red to orange, redbrown, earthy, blocky, calcareous, silty and occasionally grading to Siltstone to very fine Sandstone - poor visible porosity, abundant clay infill, no show.

This interval was drillstem tested(2822' - 2860') and recovered 60' of drilling mud.

The Shawnee(3756' - 3777') consists of a Limestone - Light to medium brown, buff, biomicrite, microcrystalline, microsucrosic to sucrosic, brittle, clean, fossiliferous, sandy, trace to fair intercrystalline porosity, trace vuggy porosity, light yellow to pale blue hydrocarbon fluorescence in 6% of the samples, very faint slow streaming cut, trace oil stain, interbedded with Limestone - Brown, cryptocrystalline dense, argillaceous, tight, no show.

Minor shows occurred in the Marmaton and Cherokee(enclosed striplog) and generally consist of a pale blue hydrocarbon fluorescence in less than 2% of the samples and seem in direct contact with carbonaceous Shale stringers.

A Morrow "V-6" Sandstone interval occurred from 5122' to 5138' and consists of a Sandstone in 5% of the samples - Clear, white, yellow to orange and varicolored in part, slight friable, hard, very coarse lower to fine upper, poorly sorted, subangular

ORIGINAL

WELL DATA

OPERATOR: Western Operating Company - Denver, Colorado

WELL NAME: No. 14-1 Danielle

LOCATION: 1550' FNL & 330' FWL, Section 23, T20S, R42W, Greeley County, Kansas - 15Miles SW of Tribune, Kansas

API NO.: 15 - 071 - 206960000

ELEVATION: GROUND LEVEL 3745', KELLY BUSHING 3755'

SPUD DATE: 11/18/98

TOTAL DEPTH: 11/28/98, Misissippian Driller 5315', Logger 5315'

COMPANY MAN: Dale Hart - Lamar, Colorado

CONTRACTOR: Murfin Drilling Company rig No. 25, Type: Double jackknife, tripple stand, Toolpusher Gus Schwartz

SURFACE CASING: 12 joints of new 13 3/8", 48Lbs/ft, set at 535'

PRODUCTION CONSULTANT: Eugene W. Ohlemeier, EWO Consultants, Inc. - Lakewood, CO

WELLSITE GEOLOGIST: Peter Debenham with mudlogging trailer. 330 Hideaway Circle Road, Evergreen, CO 80439 303/674-0633. Call depth 2200'.

SAMPLES: 20 ' samples to 3900' and 10' from 3600'. One set dry cut stored with Western Operating Company.

MUD PROGRAM: Service Mud company, Engineers Tony Maestas and Reid Atkins, Type: Chemical/Gel, premix Barite - displaced at 3920'. Weighted control mud through the Cedar Hills Nitrogen zone.

DRILL STEM TESTING: Trilobite Testing - Engineer Shane McBride
DST No. 1(2822' - 2860'), Chase Fm.
DST No. 2(5028' - 5163'), Morrow Fm.

ORIGINAL

WESTERN OPERATING COMPANY

NO. 14-1 DANIELLE

SECTION 14, T20S, R42W

GREELEY COUNTY, KANSAS

NOVEMBER, 1998

15-071-20696-00-00

Wellsite Geologist:

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