TABLE OF CONTENTS

SUMMARY AND CONCLUSIONS

No significant unexpected hazards or rig delays were encountered during the drilling of the Anderson I well. The planned drilling time (10 days) was exceeded due to the extended section of unanticipated volcanics between 720 Ft. and TD (3406 Ft.). The overall drilling and casing program proved adequate for the well, even though 3 hours were lost to a minor lost circulation zone at 1373 Ft.. The following discussion will be detailed by drilled/cased interval:

12 1/4" Hole / 8 5/8" Surface Casing

The 8 5/8" Casing was planned to be set at 600 Ft. in order to protect fresh water aquifers known to exist above the Columbia River Basalt (initially estimated between 700 and 1000 feet). Due to the fact the Basalt was tagged at 384 Ft., however, the surface hole was TD'd at 420 Ft. at the base of the section. This depth was elected since it satisfied the State of Oregon's "10% of TD" requirement for the surface string and the basalt would provide an excellent high strength shoe for drillout of the surface casing. It further resulted in significant savings in time and materials.

One additional bit trip was required to drill an 8 3/8" pilot hole in the basalt. Since there was insufficient weight available to drill the 12 1/4" hole in this hard formation at at such a shallow depth drilling the pilot hole resulted in a savings in rig time. No ledges or deviation problems were encountered from simply using the 12 1/4" bit to open the hole up. This was primarily due to the low bit weights used, the hardness/homogeneity of the formation and the low angle of dip. And since a used rig bit was available a net savings in time and money resulted in drilling the pilot hole.

Cementing operations went relatively smoothly. The present technique of mixing cement on location in Readymix trucks does save money over using a major oilfield cementing company such as Halliburton. And for shallow cementing operations this method will be quite adequate. The benefit of using the method is that excellent batch mixing of the cement occurs. The weakness is that density control must be monitored much more closely as the water is added and the water must be added at a very high rate initially to prevent dehydrated lumps from forming which will not break up under normal mixing. A more detailed discussion of this procedure and the equipment used is covered in the appendix. As a result, 200 SX of Class "G" Neat Cement were pumped with returns to surface, the float held and the cement/casing tested successfully prior to drillout.

7 7/8" Hole

Following drillout of the 8 5/8" casing, minor sands and shale sequences were encountered to 860 Ft.. The clays were relatively unreactive and good mud properties were easily maintained using the planned dispersed mud system and the rig's desander/desilter. Volcanics were drilled into at 860 Ft.. No significant problems occurred with mud control after this point except that at 1360 Ft. a minor lost circulation zone was drilled which resulted in a loss of 150 bbls of mud before full returns were regained. Since the mud system did not have a pill tank LCM was simply added to the suction tank as volume was built. This high volume - high concentration pill proved quite sufficient as full returns were regained after only about half the volume was pumped past the lost circulation zone.

Slow penetration was the only other difficulty experienced after the lost circulation zone. Soft formation insert bits were most successful in drilling this interval due to the long run times and the additional weight which could be used on them. Acquiring the additional weight was a minor problem and is taken up in the following "BHA Selection" portion of this discussion.

After reaching a TD of 3406 Ft. and having explored all surface resistivity anomalies further drilling was abandoned. Schlumberger then ran the following logs: Dual Induction, FDC, CNL and GR. Logging conditions were excellent and no fill was noted at TD. Subsequently a 56 SK cement plug was set at 1429 Ft. to cover the interval 1329-1429 Ft. based on openhole caliper. A second 37 SK plug was set at 558 Ft. and dressed off at 450 Ft.. This left open a single water sand below the surface casing for the landowner, Mr. Anderson, to explore for irrigation potential. The wellhead was cutoff and an extension was welded to bring the top of the casing 1 Ft. above the ground level. A buttplate was tackwelded over the end of the casing in accordance with the special abandonment procedures requested by the State of Oregon Department of Mineral Industries, the location was filled in and the well was turned over to the landowner.

BHA Selection

Taylor's Rig #4 which was used on this well was normally supplied with 6 1/2" drillcollars. These, were unacceptable for the 7 7/8" hole, however, due to the fact that they were too large to be fished with an overshot in the planned hole. As a compromise they were used to drill 12 1/4" hole while waiting on Taylor's Rig #6 to finish and release the 6" collars it was supplied with. These collars were used on the Anderson well to a depth of 2100 Ft. at which time it was evident that more bit weight was required for the volcanics. Hole conditions at this time were excellent and the 6 1/2" collars were available on location. Consequently 3 - 6 1/2" collars were added to string on the assumption that such a short section could be successfully speared as long as the

hole remained in good shape. Furthermore the 6 1/2" collars were new. No problems were experienced. The rig was supplied with 4 1/2" drillpipe and the assembly was run slick at all times with no apparent problems with deviation, ledges or extraordinary bit wear.

OPERATIONS SUMMARY for 8 5/8" SURFACE CASING

Drilling: 0 to 393 ft.

1. Drilled 12 1/4" hole with 3/4 hours rotating time as follows:

RPM	100
WT (1000 lbs)	5-11
GPM	318
PRESSURE	650
DEVIATION	3/4 DEG.

2. Number of bits used: 1 New

3. BHA:

   Bit/Bit Sub/12 x 6 1/2" DC's

Drilling: 393 to 420 ft.

1. Drilled 8 3/4" hole with 3 1/2 hours rotating time as follows:

RPM	60-65
WT (1000 lbs)	10-15
GPM	404
PRESSURE	970
DEVIATION	3/4 DEG.

2. Number of bits used: 1 Used

3. BHA:

   Bit/Bit sub/12 x 6 1/2" DC's

4. Opened to 12 1/4" hole with 5 hours rotation time as follows:

RPM	80
WT (1000 lbs)	6-7
GPM	404
PRESSURE	500
DEVIATION	3/4 DEG.

5. Number of bits used: 1 Used

6. BHA: No change.

Casing:

1. Ran 8 5/8" casing to 420 ft. (KB) as follows:

Guide Shoe	1.60
One Joint	38.80
Float Collar	1.20
10 jts. 24#/ft. K-55	381.49

2. Ran 3 Centralizers on collars.
(bottom centralizer 10 ft. below float collar).

Cement:

1. Cemented down casing with 200 sacks class "G" neat cement plus 2% $CaCl_2$.

2. Displaced with water, circulating excess cement to surface.

3. Bumped plug with 400 PSI for 5 minutes - no backflow.

OPERATIONS SUMMARY FOR 7 7/8" HOLE

Drilling: 420 to 3406 ft.

1. Drilled 7 7/8" hole with 182.75 hours rotating time as follows:

RPM	65-100
WT (1000 lbs)	8-22
GPM	157-252
PRESSURE	1000-1600
DEVIATION	2 DEG. (MAX)

2. Number of bits used: 4 New

3. Final BHA:

   Bit/Bit Sub/3 x 6 1/2" DC's/Crossover/12 x 6" DC's

4. Three hour delay due to lost circulation zone at 1360 ft.

Logs: DIL, FDC, CNL, GR

BIT SELECTION SUMMARY

BIT NO.	TYPE	DEPTH OUT	FEET	HOURS	FT/HR	WT (1000LBS)	RPM	PUMP PRESS	GPM	GRADE
1	12 1/4-DS	393	363	16.75	21.7	5-11	100	450	318	2-2-I
2RR	8 3/4-S84F	420	27	3.5	7.7	10-15	60-65	970	404	3-3-I
1RR	12 1/4-DS	420	27	5.0	17.9	6-7	80-90	500	404	4-4-1/16
3	7 7/8-DS	1009	631	26.75	23.6	8-18	70-90	1250	227	5-5-1/8
4	7 7/8-FDT	1692	683	42.25	16.2	16-18	75-90	1200	214	5-5-1/8
5	7 7/8-F2	3244	1552	91.75	16.9	18-22	80-70	1600	252	5-3-I
6	7 7/8-A1	3406	162	22.0	7.4	12-22	65-100	1600	228	2-2-I

BOTTOM HOLE SURVEYS

Measured Depth (ft)	Inclination Angle (deg)
250	0.75
420	0.75
823	1.25
1009	1.25
1130	1.25
1465	1.00
1724	1.25
2093	1.00
2623	1.50
3406	2.00

DAILY REPORT SUMMARY

Day 1, 363 ft drilled 9/22/83 TD: 393 ft	Spudded 10:30 am 9/20. Mixed mud and welded conductor/flowline extension. Drlg & Survey. POOH for pilot bit.
Day 2, 27 ft drilled 9/23/83 TD: 420 ft	Drlg 8 3/4" pilot hole in basalt. Survey & POOH. Open hole with 12 1/4" bit. POOH Ran 11 jts 8 5/8" casing to 420 ft. Cmt same with full returns. WOC 12 hrs.
Day 3, 89 ft drilled 9/24/83 TD: 467 ft	WOC. Cut csg & Nipple up csg head + BOP. Test csg + BOP under state supervision. LD 6 1/2" Collars and MU 6" BHA. Drlg.
Day 4, 523 ft drilled 9/25/83 TD: 990 ft	Drlg & survey. Trip to shoe. Drlg.
Day 5, 289 ft drilled 9/26/83 TD: 1279 ft	Drlg & survey. POOH for bit. RIH with bit and ream last 60 ft. Drlg & Survey
Day 6, 387 ft drilled 9/27/83 TD: 1666 ft	Drld to 1360 ft. Lost returns. Built mud volume and added LCM. Regained returns shortly after LCM across zone. Drlg & survey.
Day 7, 335 ft drilled 9/28/83 TD: 2001 ft	Drlg. POOH for bit. Survey misfired. RIH and ream down last 60 ft with new bit. Drlg & survey.
Day 8, 374 ft drilled 9/29/83 TD: 2375 ft	Drlg & survey. POOH & added 3 - 6 1/2" DC's. RIH. Drlg.
Day 9, 398 ft drilled 9/30/83 TD: 2773 ft	Drlg & survey.
Day 10, 376 ft drilled 10/1/83 TD: 3149 ft	Drlg.
Day 11, 212 ft drilled 10/2/83 TD: 3361 ft	Drlg. Drop survey & POOH for bit. RIH. Drlg.
Day 12, 45 ft drilled 10/3/83 TD: 3406 ft	Drld to 3406 ft & circ for logs. Drop survey & POOH. Ran FDC/CNL/GR/DIL without problems. RIH to 1429 ft and set 56 sk plug. PU to 558 ft and set 37 SK plug. PU to 450 ft and dress off plug. POOH laying down drillpipe.

Day 13, 0 ft drilled 10/4/83 Rig Released Well Abandoned	Laying down drillpipe & BHA. RIH open ended under State supervision and tag plug at 454 ft. Tagged hard cement. Displaced hole with fresh water. POOH laying down. ND BOP and cutoff wellhead. Weld on extension to surface pipe with buttplate. Turned well over to landowner. Released rig at 5:00 pm.

APPENDIX

1. Location Map
2. Mud Record
3. Cementing Discussion

R H EXPLORATION, INC.

SEC. 29 T. 5S R. 1E

COUNTY CLACKAMAS

STATE OREGON

Date: JUNE 7th, 83 Time: 10 AM

Prepared by: M. Tahsin Tasci

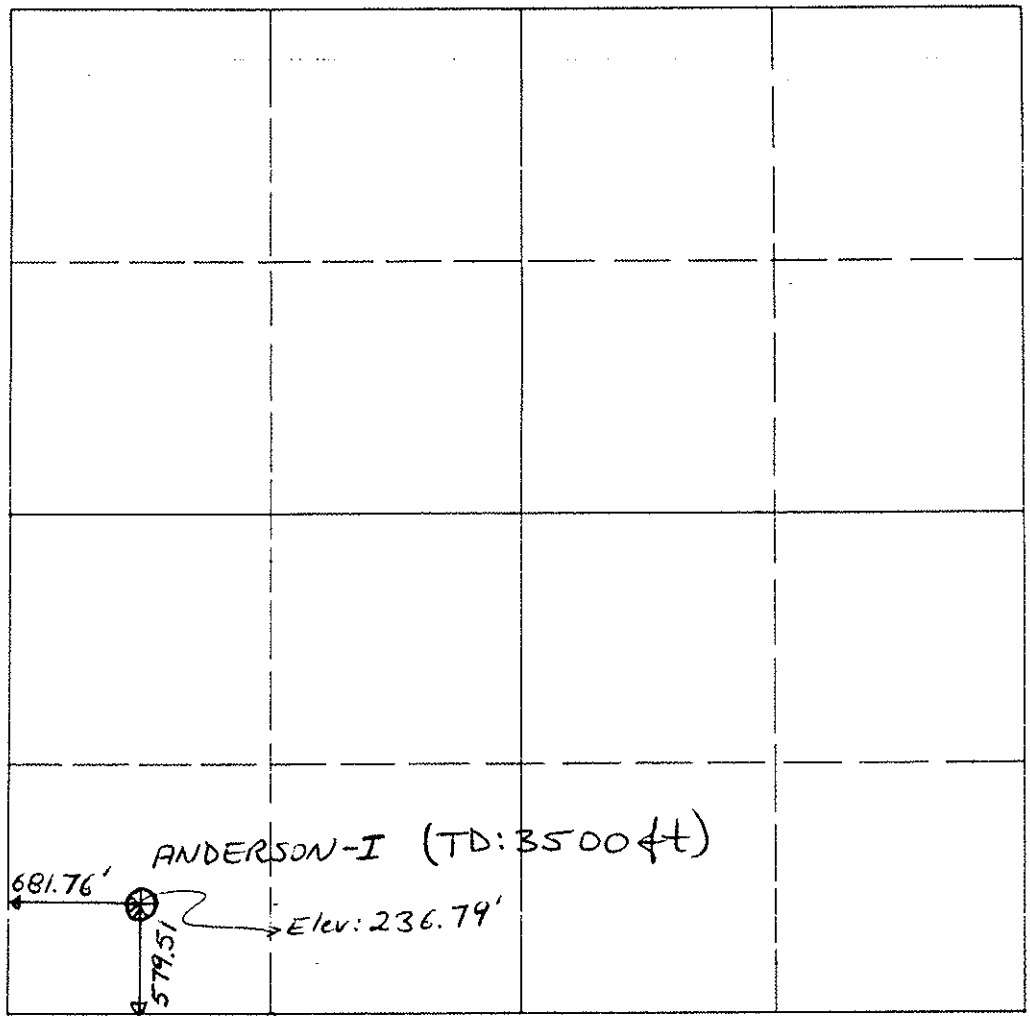
Copies For: M. P. Cleary

N

W

E

S



Scale 1" = 1000'

Oregon Operations Office:
811 S.W. FRONT AVE., SUITE 600
PORTLAND, OREGON 97204

Beaver Drilling Fluids

COMPANY R. H. Exploration STATE Oregon CASING PROGRAM: 8 5/8 inch at 420 ft.

WELL Anderson #1 COUNTY Clackamas ____ inch at ____ ft.

CONTRACTOR Taylor Drilling, Inc. LOCATION Monitor SEC 29 TWP 5S RNG 1E ____ inch at ____ ft.

STOCKPOINT Aloha, Oregon DATE 10-3-83 REPORT FOR ENGINEER Bill Caro TOTAL DEPTH 3406 ft.

DATE 1983	DEPTH feet	WT. lb/gal	FUNNEL VIS. sec/qt	PV cp	YP lb/100 ft²	GELS 10 sec / 10 min	FILTRATION API cc/30 min	HTHP cc/30 min @ °F	CAKE 32nds	ALKALINITY Pf/Mf	CHLORIDES ppm	CALCIUM ppm	SAND %	RETORT Oil %	Water %	Solids %	OIL Mud Weight	REMARKS AND TREATMENT
9/21	212	8.7	40	16	4	2/5	9.0	14.0	-	2	.5	.9	150	20	tr	6	0	94	-	Mixed 350 Bls. spud mud
9/22	407	9.4	47	27	16	3/9	9.0	12.8	-	3	.5	.9	150	20	1¼	8	0	92	-	Drill 8 3/4" opening to 12¼
9/24	420	9.2	42	12	8	3/8	12.5	10.2	-	2	1.6	2.4	400	30	3/4	8	0	92	-	Set 8 5/8" surface csg. @420'
						Install B.O.P test					D.O.C. cond. mud - Drilling 7 7/8" hole									
9/24	820	9.4	47	16	9	4/9	10.5	8.0	-	2	1.0	1.4	400	20	1.0	8	0	92		Drilling 7 7/8" bit #3
9/25	1093	9.4	48	17	9	4/10	10.5	6.6	-	2	.9	1.3	400	20	¼	8	0	92		Trip bit #4 Drilling
9/26	1435	8.7	52	24	14	4/10	11.0	8.8	-	2	1.2	1.6	400	20	¾	6	0	94		Loss of circ. @1350'-1370'
						Mix volume w/LCM - drilling w/ full returns														
9/27	1721	9.2	55	26	19	4/9	9/5	8.9	-	2	.8	1.3	350	20	1.0	8	0	92		Some loss of fluid
						Build volume - trip for bit change #5 Drilling														
9/28	2103	9.4	64	32	21	4/10	9.0	6.3	-	2	.5	.8	350	20	3/4	9	0	91		Trip pump shale pit
						Build volume - losing small amount of fluid														
9/29	2504	9.5	55	28	22	5/11	9.0	8.1	-	2	.5	.8	350	20	1½	10	0	90		Drilling
9/30	2887	9.4	50	30	20	4/10	9.5	10.4	-	2	.8	1.2	400	20	½	9	0	91		Drilling
10/1	3243	9.3	50	24	12	4/10	9.5	9.4	-	2	.7	1.2	400	20	½	9	0	91		Drilling - P.O.H.

COST PER FOOT $3.46

MUD MATERIALS
Used (Total)

MATERIAL	AMOUNT	COST $	MATERIAL	AMOUNT	COST $	MATERIAL	AMOUNT	COST $
Barite	9	93.15	Kwik Seal	31	1112.90			
Bentonite	311	3110.00	Mica (f)	32	644.80			
Caustic	21	904.05	Cedar Fiber	18	430.20			
Drispac	8	2079.20	Nut Seal(m)	4	84.60			
Soda Ash	5	178.25						
OrzanL.S.	40	1590.00						
DMS	2	192.70						
Cement	8	90.00				Drayage		
Lignite	35	764.75				Sales Tax		
Alum. Stearate	1	99.50						$11,786.60

DRILLING MUD RECORD

A-2

Beaver Drilling Fluids

COMPANY R. H. Exploration STATE Oregon CASING PROGRAM: 8 5/8 inch at 420 ft.

WELL Anderson #1 COUNTY Clackamas _____ inch at _____ ft.

CONTRACTOR Taylor Drilling, Inc. LOCATION Monitor SEC 29 TWP 5S RNG 1E _____ inch at _____ ft.

STOCKPOINT Aloha, Oregon DATE 10-3-83 ENGINEER Bill Caro TOTAL DEPTH 3406' ft.

DATE 1983	DEPTH	WEIGHT	VISC	PV	YP	GELS	WL	FILTRATION	FILTRATE ANALYSIS	SAND %	RETORT			OIL %	REMARKS AND TREATMENT
									PF / Mf ppm Cl ppm Ca		Oil %	Water %	Solids %		
10/2	3387	9.4	55	25	17	4/11	9.0	6.6 - 2	.6 .9 400 20	1/4	9	0	91		Trip - bit #6 - Drilling
10/3	3406	---------- Ran logs --- Plug and abandon hole -- Laying down D.P.													

MATERIAL	AMOUNT	COST $	MATERIAL	AMOUNT	COST $	MATERIAL	AMOUNT	COST $
						Drayage		
						Sales Tax		

MUD MATERIALS
Used (Total)

DRILLING MUD RECORD

A-3

CEMENTING DISCUSSION

As mentioned in the "Summary and Conclusions" section of this report, the present practice of utilizing Readymix trucks to cement surface casing is cost effective and in most cases will result in a successful job as long as a reasonable attention to detail is excercised. However, some notes and precautions regarding procedures and standardization are considered worth mentioning here in the event further operations are considered in the Oregon area and this procedure is to be utilized again.The notes and suggestions made result from observations and hands-on experience on both this well and the Rose I well. The points made apply to three general headings associated with the cementing process: Cement Mixing; Water Supply; and Pumping the Cement. The discussion follows:

Cement Mixing:

The primary weakness with mixing the cement in the Readymix trucks is that if the water is not pumped in and mixed fast enough with the cement, dehydrated lumps of cement are formed which do not break up under normal mixing. The problem apparently was not isolated to this well since the crews had already made a filter screen out of chicken-wire to catch the larger lumps before they went into the suction tank of the cement pump. The problem becomes more critical the less excess water one mixes with the cement. Generally water is blended in at a high rate until the truck operator (observing the mixing in the truck) says the mixture "looks good". This generally results in a cement density of 13.5-14.0 PPG. Despite this excess water the surface samples set up extremely hard in 12 hours. Apparently the condition of the cement is enhanced by the calcium chloride used in the surface slurry in spite of the excess water. As the excess water is reduced in an attempt to achieve a standard 15.8 PPG slurry the cement has a tendency to loose pumpability much faster than indicated in references.

Assurance was received from Central Readymix in Chehalis, Washington that the cement delivered was an "oilfield quality" class "G" cement. The report on the Rose I well contains a copy of the chemical analysis of the cement that took an early set on that job (fortunately the casing was cleared). Although Central Readymix appears very eager and determined to supply a good product, such things as coarseness of grind and curing procedures are difficult to ascertain unless closely controlled at the mill and they make a significant difference in the setting characteristics of the slurry. I suspect this was the cause of the problems encountered on these two wells.

For the future, I would recommend that for these surface strings sufficient water be added to the cement to produce a slurry density of 14.0-14.5 PPG. This amount of water should produce a relatively good, pumpable slurry with a minimum of lumps. And as long as the cement does not change and an accelerater is used I do not believe cement strength will be degraded to the point it will be unusable here. Further, a finer mesh screen should be made to replace the chicken-wire presently used. Although the large lumps are stopped, enough contamination gets through to plug the valves on the duplex pump used to pump the cement.

Water Supply

Water on Taylor's Rig #4 is stored in a large horizontal cylindrical tank. This presents a problem when trying to gauge the tank for the proper amount of water to mix in the cement. In the mixing process a large volume of water must be pumped rapidly and gauged accurately in order to achieve both a pumpable slurry and a cement with sufficient strength. In an attempt to improve the accuracy of this gauging, a white strip of tape was placed vertically across the end diameter of the tank and a strap was made and written in ink on the tape. Next to each inch mark the volume in gallons and barrels was recorded. Marking the tank in such a manner should permit an accuracy within 50 gallons of the planned discharge volume. This should be considered a minimum acceptable accuracy for mixing cement in this manner. In the event the tape comes off or is removed from the water tank, a calibration table is listed at the end of this section of the appendix.

Pumping the Cement

A single duplex pump (referred to as "misty blue") is presently used to pump cement on rig #4. Previously there was no way to gauge pump rate and the only speed indicator was an RPM gauge on the engine. In an attempt to come up with a simple, accurate method to gauge pump rate during cementing and pill displacements a strap was made of the sheaves and the gear ratios recorded. As a result, a calibration was made correlating the readable engine RPM and pump rate in GPM at both 100% and 85% efficiencies. Copies of this calibration were given to the operater (John Taylor) to plasticize and placard on the pump. The following is a list of that calibration:

Rig #4 Duplex Pump Delivery
(1" rod * 6" stroke * 5" liner / Max Press = 310 PSI)

ENGINE RPM	PUMP SPM	OUTPUT @ 100% EFF. GPM	OUTPUT @ 85% EFF. GPM
500	29.33	58.63	49.84
600	35.19	70.36	59.81
700	41.06	82.09	69.77
800	46.93	93.82	79.74
900	52.79	105.5	89.71
1000	58.66	117.3	99.71
1250	73.32	146.6	124.6
1500	87.99	175.9	149.5
1705	* 100	199.9	169.9

* = red line speed

RIG #4 WATER TANK CALIBRATION

(Internal Dimensions: L=296.5 in, Diam=94.875 in)

Fluid Level Height (in)	Capacity (gals)	Fluid Level Height (in)	Capacity (gals)
10	510.1	53	5212.9
11	586.5	54	5333.7
12	666.0	55	5454.1
13	748.4	56	5574.1
14	833.5	57	5693.6
15	921.1	58	5812.6
16	1011.1	59	5931.0
17	1103.5	60	6048.8
18	1197.9	61	6165.9
19	1294.4	62	6282.2
20	1392.8	63	6397.7
21	1493.0	64	6512.2
22	1595.0	65	6625.9
23	1698.6	66	6738.5
24	1803.7	67	6850.0
25	1910.3	68	6960.3
26	2018.3	69	7069.4
27	2127.6	70	7177.2
28	2238.1	71	7283.6
29	2349.7	72	7388.6
30	2462.4	73	7492.0
31	2576.2	74	7593.7
32	2690.9	75	7693.7
33	2806.5	76	7791.9
34	2922.9	77	7888.2
35	3040.0	78	7982.4
36	3157.9	79	8074.4
37	3276.4	80	8164.1
38	3395.4	81	8251.5
39	3515.0	82	8336.2
40	3635.1	83	8418.2
41	3755.5	84	8497.3
42	3876.4	85	8573.3
43	3977.5	86	8646.0
44	4118.8	87	8715.1
45	4240.4	88	8780.3
46	4362.0	89	8841.2
47	4483.8	90	8897.5
48	4605.6	91	8948.6
49	4727.3	92	8993.6
50	4849.0	93	9031.6
51	4970.5	94	9060.5
52	5091.8	94.875	9074.2

WELL ANDERSON #1

COMPANY KH EXPLORATION

AREA MONITOR

LOCATION 661.76'L & 579.51'N OF SW COR, SEC 29, T5S, R1E, W.M.

COUNTY, STATE CLACKAMAS CO., OREGON

- WEGE -
WESTERN GEO-ENGINEERS

"A SERVICE TO THE OIL AND GAS INDUSTRY"

LITHOLOGY SYMBOLS

Sand, Clay and Shale, Silstone, Sandy Siltst., Congl. conc., Lignite or Coal, Vol. rock, Intrusive, Salt, Limest., Chert

REMARKS

WELL ELEV. GL. 236.79'
KB. 246.49'

SALINITY IN PPM CL

FILTRATE IN CC/ 30 MIN.

GAS TRAP AGITATOR TYPE

MUD LIGNOSULFANATE BEAVER DRILLING FLUIDS TAYLOR RIG 6

LEGEND

MUD DATA
W WEIGHT
V VISCOSITY
F FILTRATE
FC FILTER CAKE
SD SAND IN %

S SALINITY
R RESISTIVITY
RF FILTRATE RESISTIVITY

BIT DATA
NB NEW BIT
RRB RERUN BIT

CB CORE BIT
WLCB WIRE LINE CB

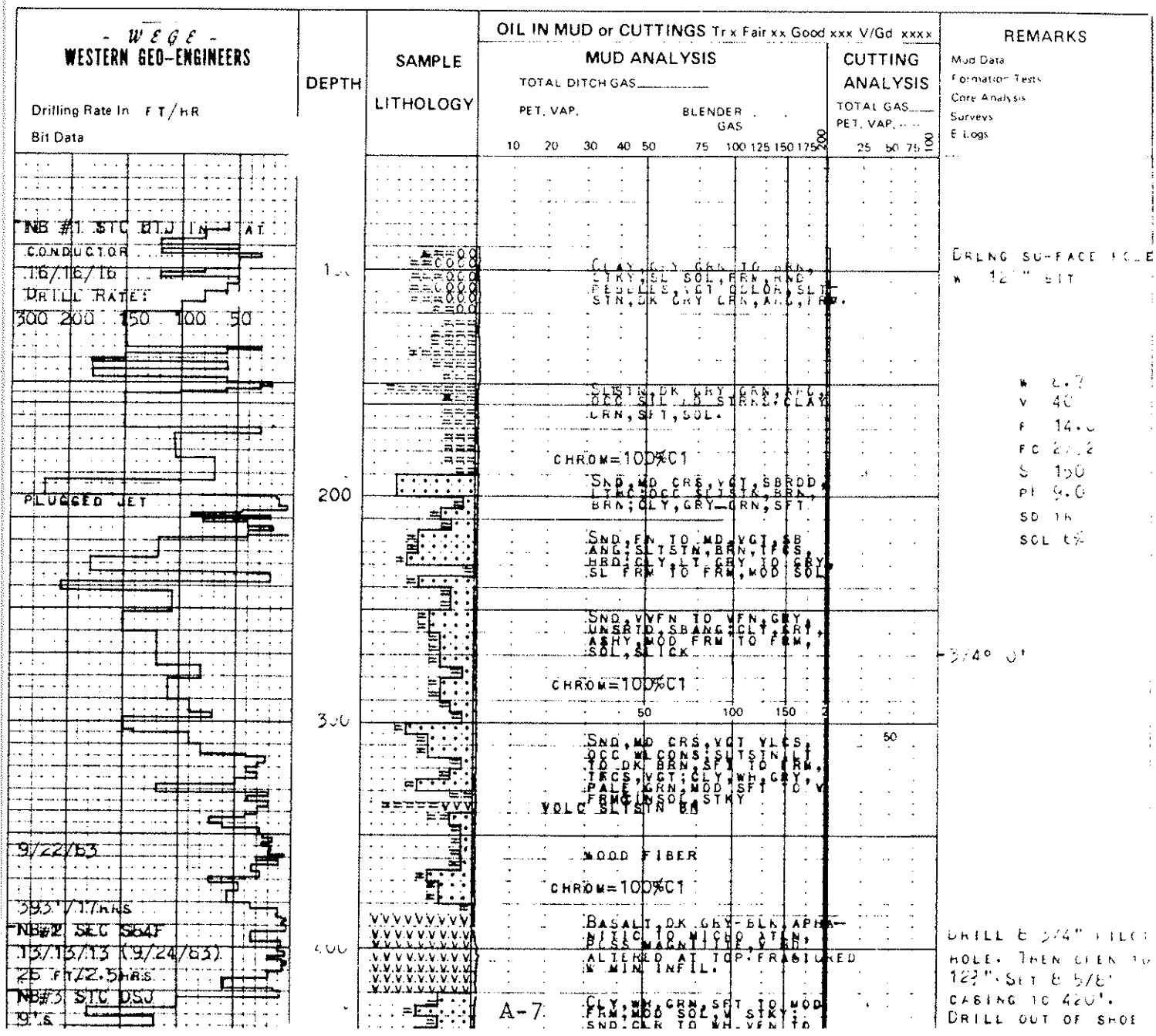
OTHER DATA
TG TRIP GAS
CG CONNECTION GAS
C CARBIDE GAS

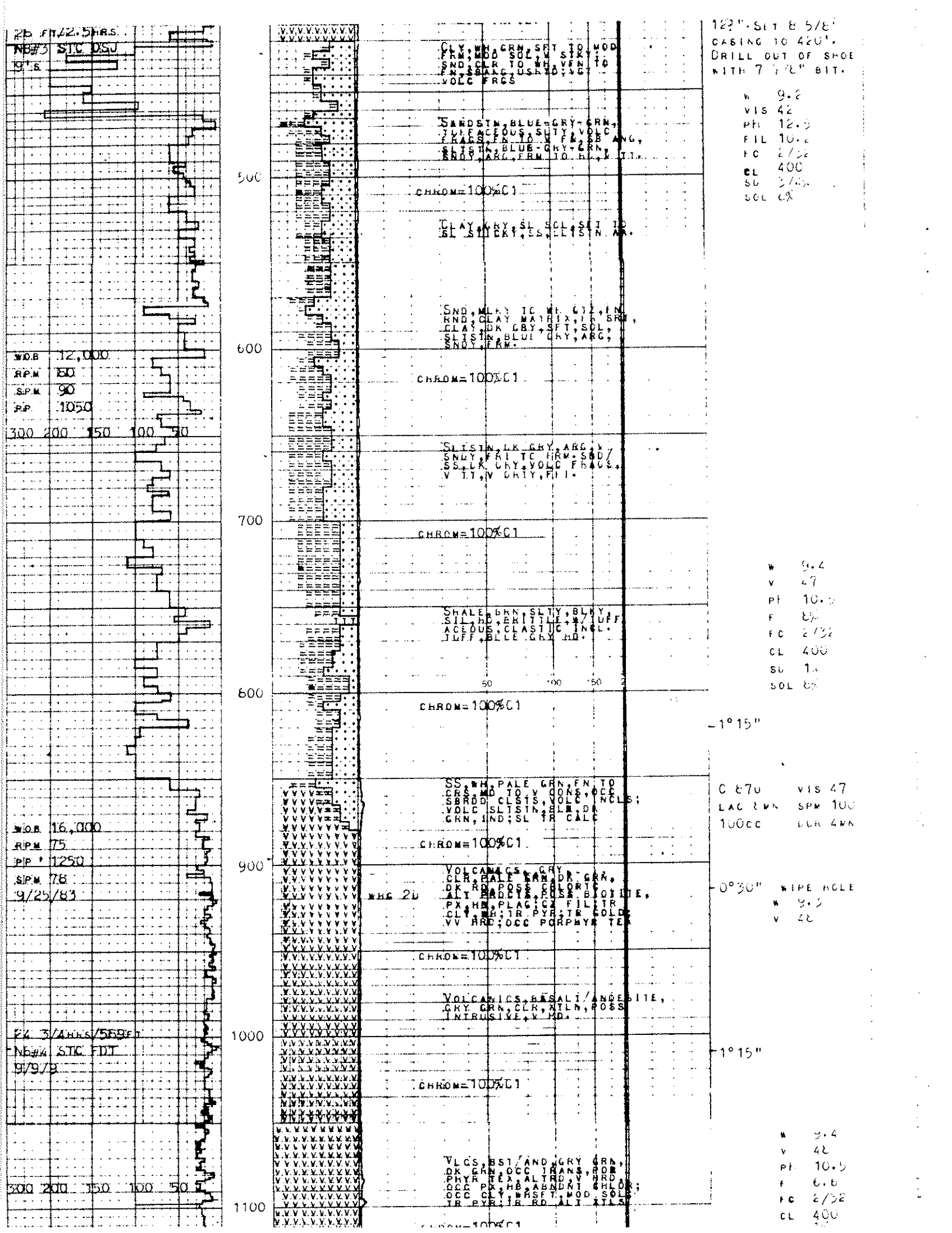
CR CIRCULATE RETURNS
NR NO RETURN
DST DRILL STEM TEST
[DST INTERVAL
] CORE INTERVAL

CASING

8 5/8" TO 42'
TO
TO

DATE 9/21/83 TO 10/2/83 | DEPTH 60' TO 3400' | ENGINEERS THOMAS DUVALL FISH

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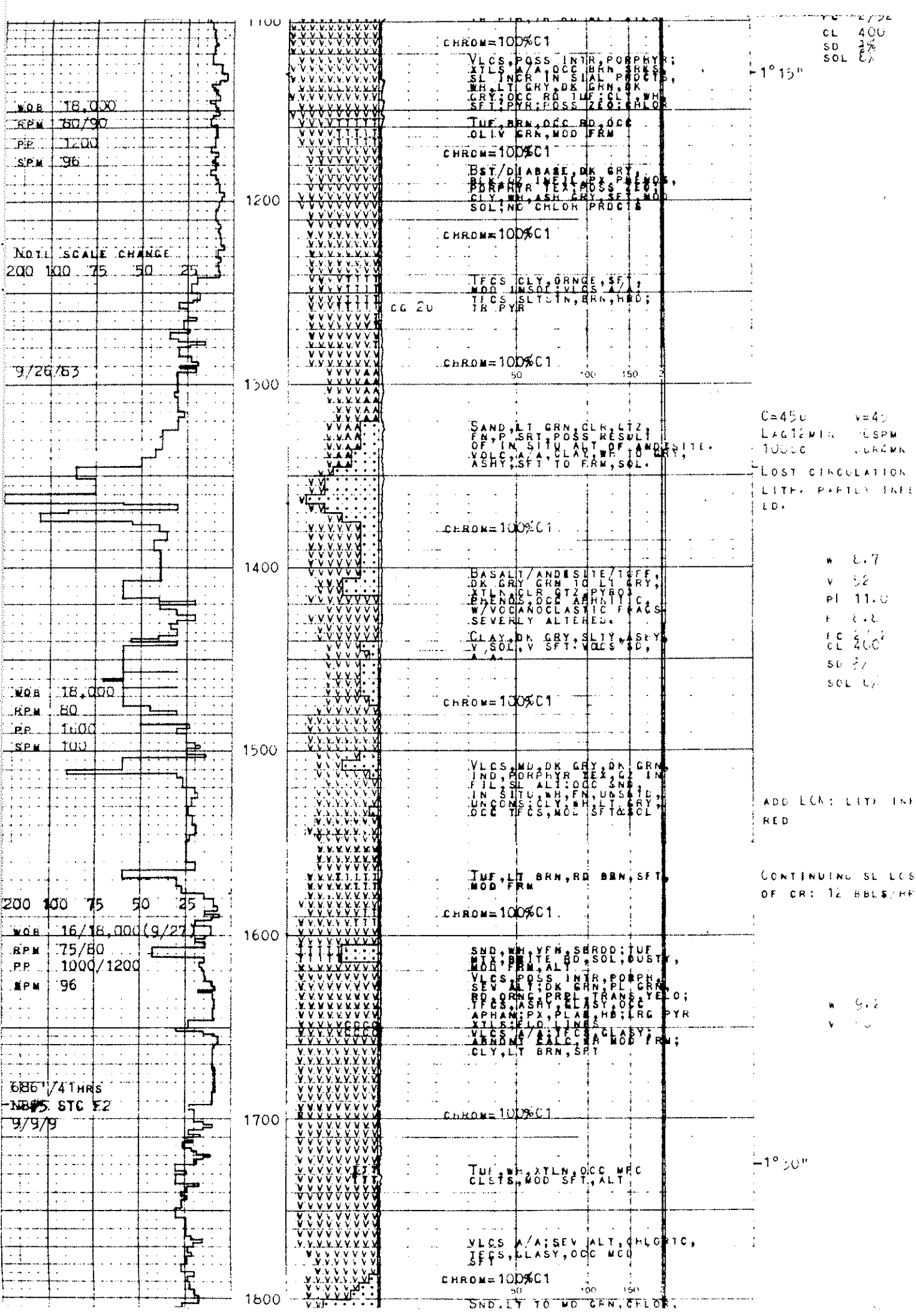
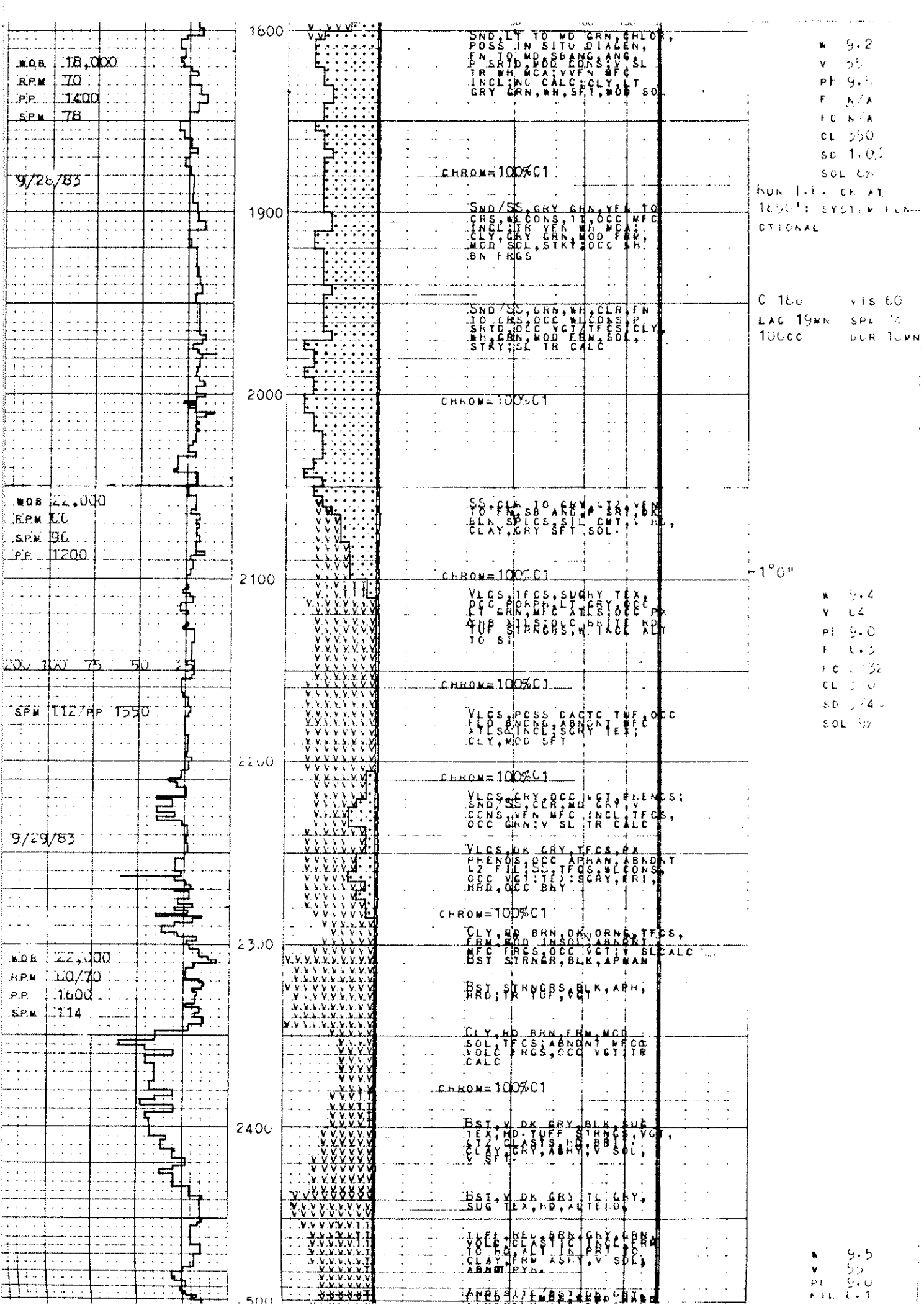
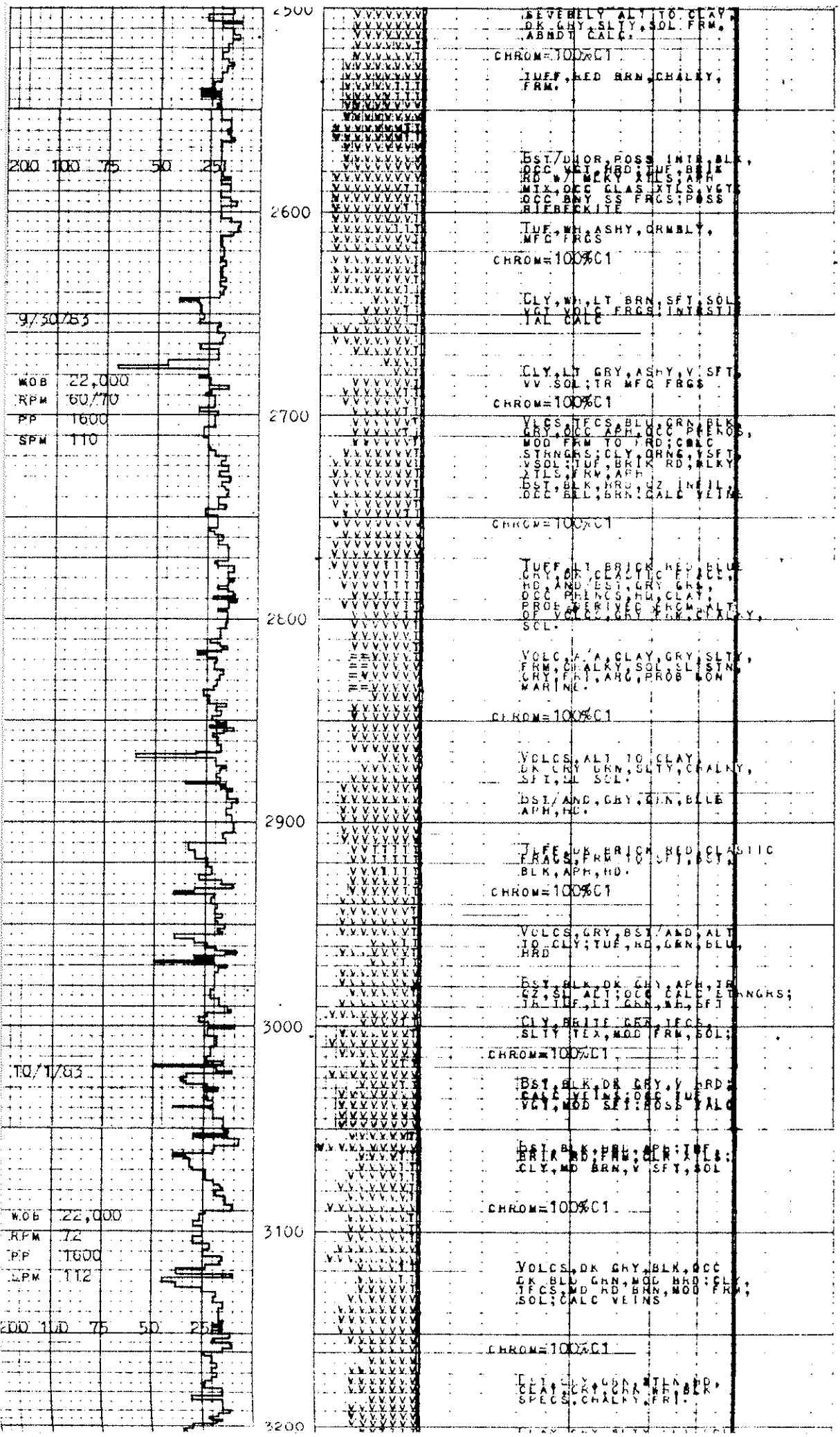
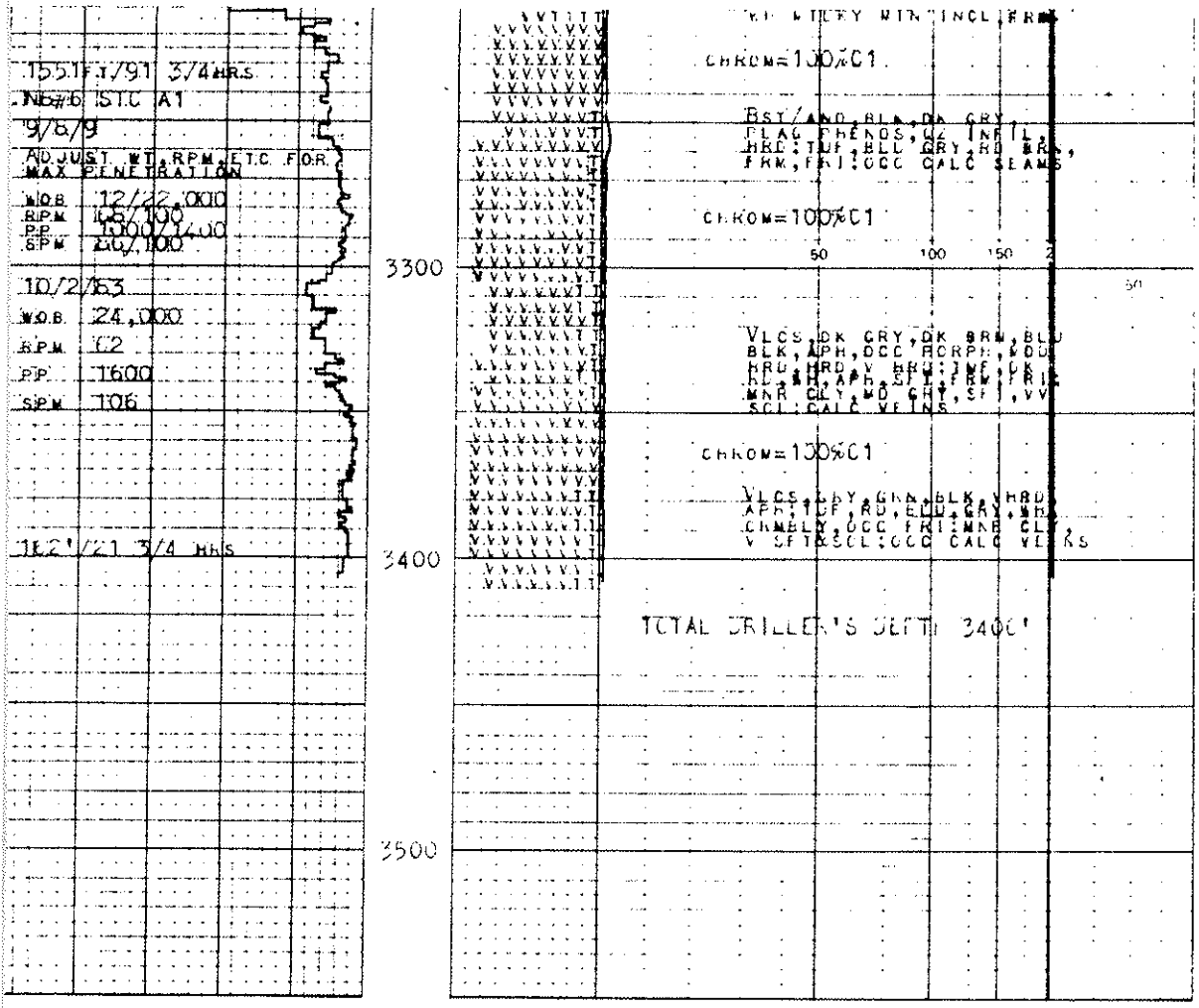
NB#3 STC DSJ
19'S.
W.O.B 12,000
RPM 150
SPM 90
PP 1050
300 200 150 100 50
W.O.B 16,000
RPM 175
PP 1250
SPM 78
9/25/83
FM 3/4HRS/568FT
NB#4 STC FDT
9/9/83
300 200 150 100 50
500
600
700
600
900
1000
1100
CLY,WH,GRN,SFT TO MOD FRM,MOD SOL,V SLKY; SND,CLR TO WH,VFN TO FN,SBANG TO SBRD,VG VOLC FRGS
SANDSTN,BLUE-GRY-GRN, TUFFACEOUS,SLTY,VOLC FRAGS,FN TO M FN,SBANG, SLTSTN,BLUE-GRY-GRN, SNDY,ARG,FRM TO HD,V LT.
CHROM=100%C1
CLAY,ANY,SL SOL,SFT TO SL STICKY,SS,LTSTN AA.
SND,MLKY TO MK GYZ,FN RND,CLAY MATRIX,IN SRT, CLAY,DK GRY,SFT,SOL, SLTSTN,BLUE GRY,ARG, SNDY,FRM.
CHROM=100%C1
SLTSTN,LK GRY,ARG,V SNDY,FRI TO FRM,SBD/ SS,LK GRY,VOLC FRAGS, V LT,V CHTY,FRI.
CHROM=100%C1
SHALE,BRN,SLTY,BLKY, SIL,HD,BRITTLE,W/TUFF ACEOUS,CLASTIC,INCL. TUFF,BLE GRY,HD.
50 100 150
CHROM=100%C1
SS,WH,PALE GRN,FN TO GRS,MD TO V CONS,OCC SBRD CLSTS,VOLC INCLS; VOLC,SLTSTN,BLK,DK GRN,IND;SL TR CALC
CHROM=100%C1
VOLCANICS,GRY-GRN, CLR,PALE GRN,DK GRN, DK RD,POSS CHLORTC ALT PRDCTS,POSS BIOTITE, PX,HB,PLAG;CZ FIL;TR CLY,WH;TR PYR;TR GOLDC VV ARG,OCC PORPHYR TEX
WHC 2b
CHROM=100%C1
VOLCANICS,BASALT/ANDESITE, GRY GRN,CLR,NTLN,POSS INTRUSIVE,V HD.
CHROM=100%C1
VLCS,BSLT/AND,GRY GRN, DK GRN,OCC TRANS,RDM PHYR TEX,ALTRD,V HRD,V DK; OCC PX,HB,ABNDNT CHLOR; OCC CLY,WH,SFT,MOD SOL; TR PYR;TR RD ALT XTLS
CHROM=100%C1
12¼"-SET 8 5/8" CASING TO 420'. DRILL OUT OF SHOE WITH 7 7/8" BIT.
W 9.2
VIS 42
PH 12.5
FIL 10.2
FC 2/32
CL 400
SD 3/4%
SOL 6%
W 9.4
V 47
PH 10.5
F 8%
FC 2/32
CL 400
SD 1%
SOL 8%
-1°15"
C 870 VIS 47
LAC 2MM SPM 100
100CC DDR 4MM
-0°30" WIPE HOLE
W 9.3
V 42
-1°15"
W 9.4
V 42
PH 10.5
F 6.6
FC 2/32
CL 400


WOB 18,000
RPM 80/90
PP 1200
SPM 96
NOTE SCALE CHANGE
200 100 75 50 25
9/26/63
WOB 18,000
RPM 80
PP 1600
SPM 100
200 100 75 50 25
WOB 16/18,000 (9/27)
RPM 75/80
PP 1000/1200
SPM 96
686'/41HRS
NB#5 STC F2
9/9/9
1100
1200
1300
1400
1500
1600
1700
1800
CHROM=100%C1
VLCS,POSS INTR,PORPHYR;
XTLS,A/A;OCC CHRN FRKS,
SL INCR IN SIAL PRDCTS,
WH,LT GRY,DK GRN,BLK
GRY;OCC RD TUF,CLY,WH
SFT;PWR;POSS ZEO;CHLOR
TUF,BRN,OCC RD,OCC
OLIV GRN,MOD FRM
BST/DIABASE,DK GRY,
BLK,GZ INEQ,PX PHENOS,
PORPHYR TEX,POSS ZEO;
CLY,WH,ASH GRY,SFT,MOD
SOL;NO CHLOR PRDCTS
TFCS CLY,ORNGE,SFT;
MOD UNSOL;VLCS A/A;
TFCS SLTSTN,BRN,HRD;
CG 20 TR PYR
SAND,LT GRN,CLR,GTZ;
FN,P SRT;POSS RESULT
OF IN SITU ALT OF ANDESITE.
VOLC;A/A,CLAY,MED GRY,
ASHY;SFT TO FRM,SOL.
BASALT/ANDESITE/TUFF;
DK GRY GRN TO LT GRY,
XTLN CLR QTZ,PYROX
PHENOS;OCC AMYGDULES
W/VOLCANOCLASTIC FEATS
SEVERLY ALTERED.
CLAY,DK GRY,SLTY W/SEY
V,SOL,V SFT;VOLCS AS,
A/A.
VLCS,MD,DK GRY,DK GRN,
IND,PORPHYR TEX,GZ IN
FIL;SL ALT;OCC SNDSTD
IN SITU,WH,FN,UNSRTD,
UNCONS;CLY,WH,LT GRY,
OCC TFCS,MOD SFT&SOL
TUF,LT BRN,RD BRN,SFT,
MOD FRM
SND,WH,VFN,SBRDD;TUF
MTX,WHITE RD,SOL,DUSTY,
MOD FRM,ALT
VLCS,POSS INTR,PORPHY
SEV ALT;DK GRN,PL GRN,
RD,ORNG,PREL TRANS,YELO;
TFCS,ASHY,CLASTC,OCC
APHAN;PX,PLAG,HB;LRG PYR
XTLS;FLO LINES
VLCS A/A;TFCS CLASTC,
ABNDNT CALC,MR MOD FRM;
CLY,LT BRN,SFT
TUF,WH,XTLN,OCC MRC
CLSTS,MOD SFT,ALT
VLCS A/A;SEV ALT,CHLORTC,
TFCS,CLASTC,OCC MCA
SFT
SND,LT TO MD GRN,CHLOR,
50 100 150
-1°15"
-1°20"
C=450 V=45
LAG12MIN SPM
100CC GPM
LOST CIRCULATION
LITH. PARTLY INFER
RED.
W 8.7
V 52
PL 11.0
F 8.8
FC 5/64"
CL 460
SD 5%
SOL 6%
ADD LCM; LITH INFER
RED
CONTINUING SL LOSS
OF CR: 12 BBLS/HR
W 9.2
V 50
CL 400
SD 1%
SOL 6%


WOB 18,000
RPM 70
PP 1400
SPM 78
9/28/83
WOB 22,000
RPM 80
SPM 96
PP 1200
200 100 75 50 25
SPM 112/PP 1550
9/29/83
WOB 22,000
RPM 60/70
PP 1600
SPM 114
1600
1900
2000
2100
2200
2300
2400
2500
SND,LT TO MD GRN,GHLOR,
POSS IN SITU DIAGEN,
FN TO MD SBANG-ANG,
P SRTD,MOD CONS;V SL
TR WH MCA;VFN MFC
INCL;NC CALC;CLY,LT
GRY GRN,WH,SFT,MOD SOL
CHROM=100%C1
SND/SS,GRY GRN,VFN TO
CRS,WLCONS,TR,OCC MFC
INCL;TR VFK WH MCA;
CLY,GRY GRN,MOD FRM,
MOD SOL,STKY;OCC WH
BN FRGS
SND/SS,GRN,WH,CLR,FN
TO CRS,OCC WLCONS,P
SRTD,OCC VGT/TFCS;CLY,
WH,GRN,MOD FRM,SOL,
STKY;SL TR CALC
CHROM=100%C1
SS,CLR TO GRY,VFN
TO FN,SBANG-SBRD,OCC
BLK SPECS,SIL CMT,C MD,
CLAY,GRY SFT SOL.
CHROM=100%C1
VLCS,TFCS,SUGRY TEX,
OCC PORPPL LT GRY OCC
LT GRN,MFC AYLS;OCC PK
SUB AYLS;OLC BRITE RD
TUF STRNGRS,W TACC ALT
TO SI
CHROM=100%C1
VLCS,POSS CACTC TUF,OCC
FLD BANDG,ABNDNT MFC
AYLS;INCL;SGRY TEX;
CLY,MOD SFT
CHROM=100%C1
VLCS,GRY,OCC VGT,PHENOS;
SND/SS,CLR,MD GRY,V
CONS,VFN MFC INCL,TFCS,
OCC GRN;V SL TR CALC
VLCS,DK GRY,TFCS,PK
PHENOS,OCC ARGHAN,ABNDNT
LZ FIL;SCC,TFCS,WLCONS,
OCC VGT;TEX;SGRY,FRI,
HRD,OCC BAY
CHROM=100%C1
CLY,MD BRN,DK ORNG,TFCS,
FRM,MOD INSOL;ABNDNT
MFC FRGS,OCC VGT;V SL CALC
BST STRNGR,BLK,APHAN
BST STRNGRS,BLK,APH,
HRD;TR TUF,VGT
CLY,MD BRN,FRM,MOD
SOL,TFCS;ABNDNT MFCG
VOLC FRGS,OCC VGT;TR
CALC
CHROM=100%C1
BST,V DK GRY,BLK,SUG
TEX,HD.TUFF STRNGS,VGT,
LTZ CLASTS,HD,BRIT;
CLAY,GRY,ASHY,V SOL,
V SFT.
BST,V DK GRY TO GRY,
SUG TEX,HD,AUTEID
TUFF,RED BRN,GRY,GRN
VOLC CLASTIC FRGS,
CRYSTALLINE,
CLAY,FRM ASHY,V SOL,
ABNDNT PYR.
APPEARANCE BST,RED BRN
W 9.2
V 55
PV 9.6
F N/A
FC N/A
CL 350
SD 1.0%
SOL 6%
RUN 1.1. ON AT 1850': SYSTEM FUNCTIONAL
C 180 VIS 60
LAG 19MIN SPL
100CC DLR 10MIN
-1°0"
W 9.4
V 44
PV 9.0
F 6.5
FC 3%
CL 350
SD 3/4
SOL 5%
W 9.5
V 50
PV 9.0
FIL 2.1


2500
2600
2700
2800
2900
3000
3100
3200
200 100 75 50 25
9/30/83
WOB 22,000
RPM 60/70
PP 1600
SPM 110
TD/1/83
WOB 22,000
RPM 72
PP 1600
SPM 112
200 100 75 50 25
SEVERELY ALT TO CLAY, DK GRY, SLTY, SOL FRM, ABNDT CALC.
CHROM=100%C1
TUFF, RED BRN, CHALKY, FRM.
BST/DUOR, POSS INTB, BLK, OCC VGT RMD; TUF, BRIK RD W/ MLKY XTLS; APH MIX, OCC CLAS XTLS, VGTS OCC BNY SS FRGS; POSS BIFRECKITE
TUF, MH, ASHY, CRMBLY, MFC FRGS
CHROM=100%C1
CLY, WH, LT BRN, SFT, SOL VGT VOLC FRGS; INTBSTL CALC
CLY, LT GRY, ASHY, V SFT, VV SOL; TR MFC FRGS
CHROM=100%C1
VLCS, TFCS, BLU GRN BLK GRY, OCC APH, OCC PELKOS, MOD FRM TO FRD; CALC STRNGRS; CLY, GRNG, SFT, SOL; TUF, BRIK RD, MLKY XTLS, FRM, APH BST, BLK, HRD, GZ INCL, OCC BLL, BRN; CALC VEINS
CHROM=100%C1
TUFF, BRICK RED, BLUE GRY, DK, CLASTIC FRAGS, MD, AND BST, GRY GRN, OCC PELICS, MD, CLAY, PROB DERIVED FROM ALT OF VOLC, GRY GRN, CHALKY, SOL.
VOLC, A/A, CLAY, GRY, SLTY, FRM, CHALKY, SOL, SLTSTN, GRY FRI, ARG, PROB LON MARINE.
CHROM=100%C1
VOLCS, ALT TO CLAY, DK GRY GRN, SLTY, CHALKY, SFT, VL SOL.
BST/AND, GRY, GRN, BLUE APH, MD.
TUFF, DK BRICK RED, CLASTIC FRAGS, FRM TO SFT, SOL, BLK, APH, MD.
CHROM=100%C1
VOLCS, GRY, BST/AND, ALT TO CLY; TUF, RD, GRN, BLU, HRD
BST, BLK, DK GRY, APH, IP GZ, SL ALT; OCC CALC STRNGRS; IP TUF, LT GRN, MH, SFT
CLY, BRITE GRN, TFCS, SLTY TEX, MOD FRM, SOL;
CHROM=100%C1
BST, BLK, DK GRY, V HRD; CALC VEINS; OCC TUF VGT, MOD SFT; POSS SALC
BST, BLK, PBL; APH; TUF BRIK RD, FRM; CLR XTLS; CLY, MD BRN, V SFT, SOL
CHROM=100%C1
VOLCS, DK GRY, BLK, OCC DK BLU GRN, MOD HRD; CLY; TFCS, MD RD BRN, MOD FRM; SOL; CALC VEINS
CHROM=100%C1
CLY, GRY GRN, MTLN RD, CLAY, GRY, GRN, MF BLK SPECS, CHALKY, FRI.
FC 2732
CL 350
SD 14?
SOL 10
W 9.5, V 50, PV 9, F 6.1, FC 2732, S 350, SD 12, SOL 10%
1°30"
C 170 VIS 54
LAG 20MN SPM 110
1000 GOR &MR
W 9.4
V 50
PV 9.5
F 10.4
FC 2732
S 400
SD 12
SOL 5
W 9.3
V 45
W 9.3



PF 9.5
FIL 9.4
FC 2,[illegible]
CL 40[illegible]
SD [illegible]
SOL [illegible]

C 210 [illegible] VIS
LAG 27MN SPM 100
100 CC DUR 7MN

K 5.4
V [illegible]
PF 9.[illegible]
F [illegible].[illegible]
FC 2,[illegible]
CL 40[illegible]
SD [illegible]
SOL [illegible]

RAN SCHLUMBERGER