NATURAL GAS CORPORATION OF CALIFORNIA

85 South 200 East
Vernal, Utah 84078
(801) 789-4573

November 13, 1981

Mr. Michael T. Minder
Division of Oil, Gas & Mining
1588 West North Temple
Salt Lake City, UT 84116

Mr. E. W. Guynn
Geological Survey-Conservation Div.
2000 Administration Bldg.
1745 West 1700 South
Salt Lake City, UT 84104

Re: NGC #13-16 State
Section 16, T.9S, R.19E
Uintah County, Utah
Pleasant Valley Prospect

Gentlemen:

Natural Gas Corporation of California proposes to drill the captioned well in Uintah County, Utah.

Enclosed are the following documents:

1) Application for Permit to Drill
2) Surveyor's Plat
3) BOP and Pressure Containment Data

Should you require additional information, please contact this office.

Yours truly,

Wm Ryan

William A. Ryan
Petroleum Engineer

/kh

Encls.

cc: Operations
C. T. Clark
E. R. Henry

Form DOGC-1a

SUBMIT IN TRIPLICATE*
(Other instructions on reverse side)

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL & GAS

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. Type of Work
DRILL [XX] DEEPEN [ ] PLUG BACK [ ]

b. Type of Well
Oil Well [XX] Gas Well [ ] Other Single Zone [ ] Multiple Zone [ ]

2. Name of Operator
Natural Gas Corporation of California

3. Address of Operator
85 South 200 East, Vernal, UT 84078 Telephone 801-789-4573

4. Location of Well (Report location clearly and in accordance with any State requirements.*)
At surface
800' FWL, 2122' FSL, Sec. 16, T.9S, R.19E
At proposed prod. zone
NWSW

5. Lease Designation and Serial No.
ML-35713

6. If Indian, Allottee or Tribe Name

7. Unit Agreement Name

8. Farm or Lease Name
State

9. Well No.
NGC 13-16 State

10. Field and Pool, or Wildcat
~~Pleasant Valley~~ Wildcat

11. Sec., T., R., M., or Blk. and Survey or Area
Section 16, T.9S, R.19E

12. County or Parrish
Uintah

13. State
Utah

14. Distance in miles and direction from nearest town or post office*
Approximately six miles southwest of Ouray, Utah

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drlg. line, if any)

16. No. of acres in lease
640

17. No. of acres assigned to this well
40

18. Distance from proposed location* to nearest well, drilling, completed, or applied for, on this lease, ft.

19. Proposed depth
7500

20. Rotary or cable tools
Rotary

21. Elevations (Show whether DF, RT, GR, etc.)
4705'

22. Approx. date work will start*
January 15, 1982

23. PROPOSED CASING AND CEMENTING PROGRAM

Size of Hole	Size of Casing	Weight per Foot	Setting Depth	Quantity of Cement
12-1/4"	9-5/8"	36#/Ft., K-55	300'	150 sacks (to surface)
7-7/8"	4-1/2"	11.6#/Ft., N-80	TD	650 sacks (2500' fill)

APPROVED BY THE STATE OF UTAH DIVISION OF OIL, GAS, AND MINING
DATE: 12-9-81
BY: M.J. Minder

BOP equip. rated at 5000# W.P.

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen or plug back, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

24.
Signed William A Ryan William A. Ryan Title Petroleum Engineer Date November 12, 1981

(This space for Federal or State office use)

Permit No. Approval Date

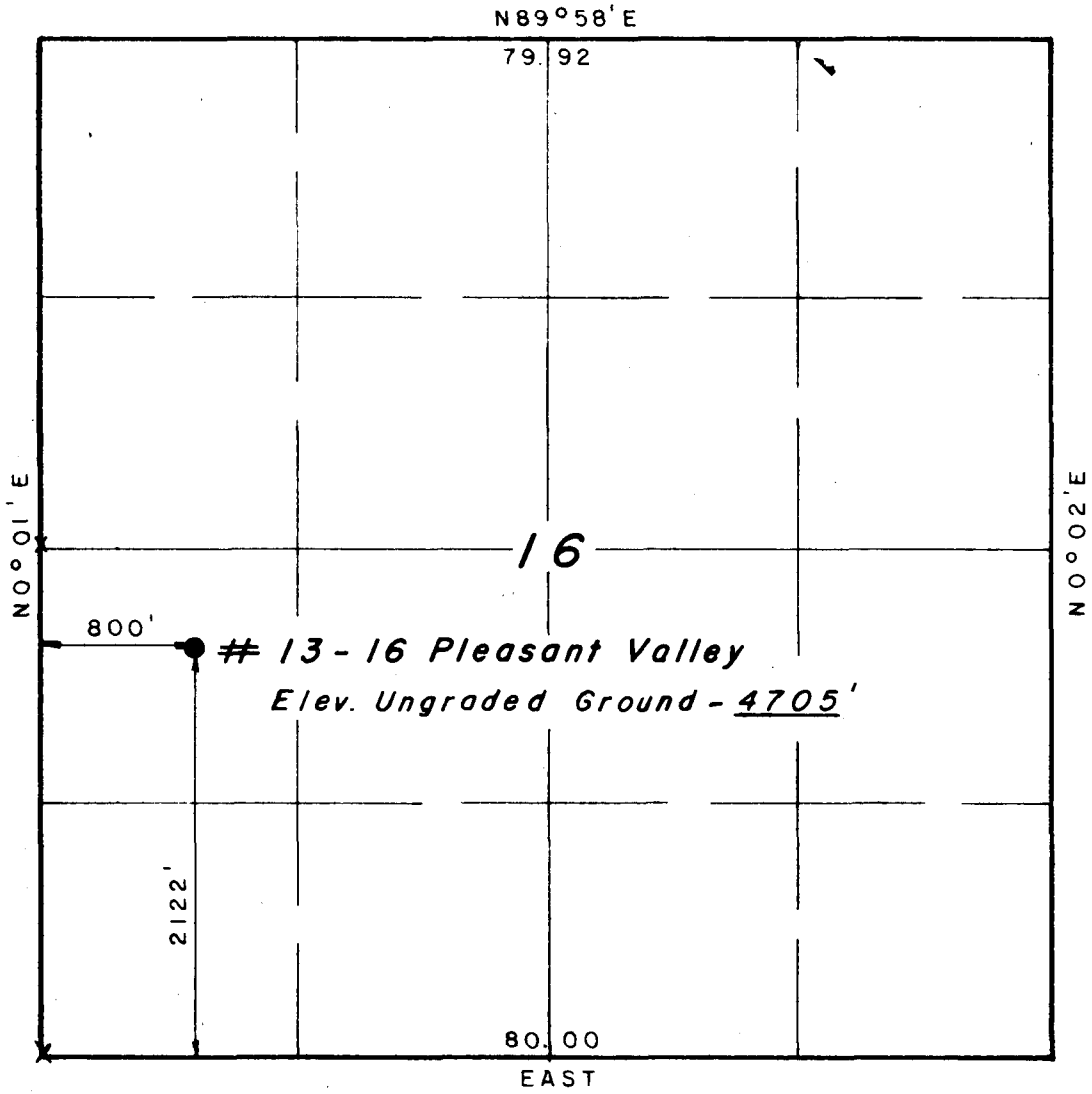
Approved by Title Date

Conditions of approval, if any:

cc: Div. OG&M; USGS; Operations; CTClark; ERHenry

*See Instructions On Reverse Side

T 9 S, R 19 E, S. L. B. & M.



X = Section Corners Located

PROJECT

NATURAL GAS CORP. OF CALIF.

Well location, # 13 - 16 Pleasant Valley, located as shown in the NW 1/4, SW 1/4 Section 16, T 9 S, R 19 E, S.L.B. & M. Uintah County, Utah.

CERTIFICATE

THIS IS TO CERTIFY THAT THE ABOVE PLAT WAS PREPARED FROM FIELD NOTES OF ACTUAL SURVEYS MADE BY ME OR UNDER MY SUPERVISION AND THAT THE SAME ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

Lawrence P. Kay

REGISTERED LAND ~~SURVEYOR~~
REGISTRATION Nº 3137
STATE OF UTAH

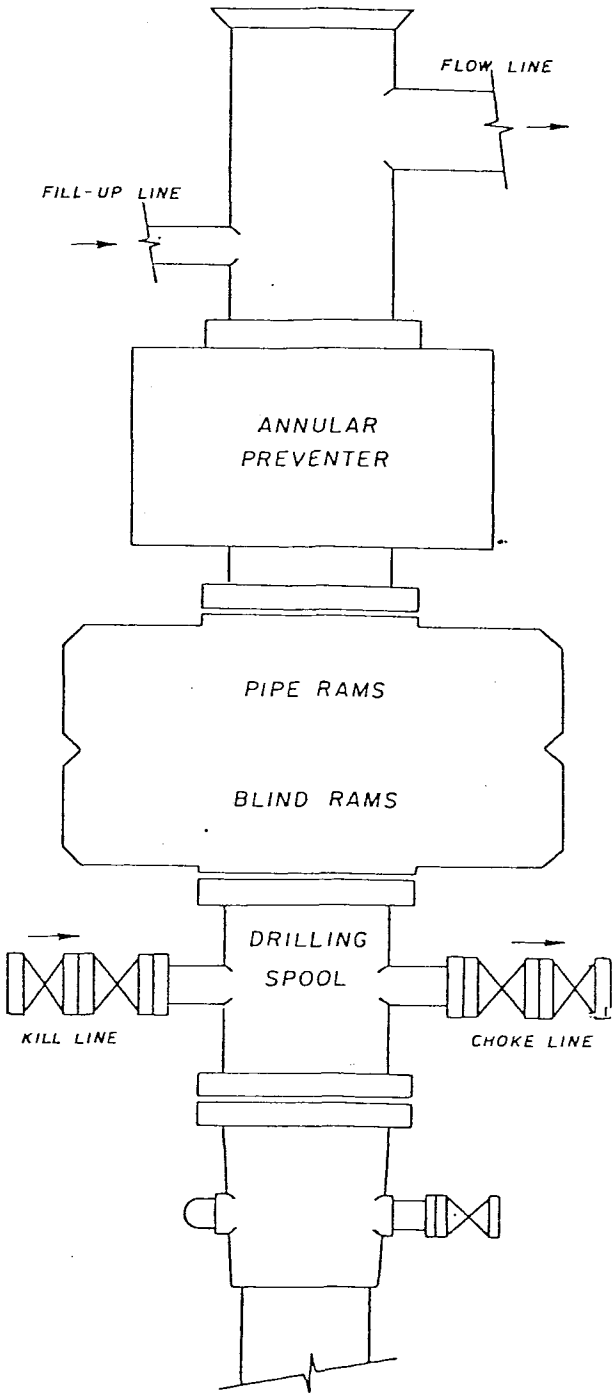
UINTAH ENGINEERING & LAND SURVEYING
P. O. BOX Q ~ 85 SOUTH - 200 EAST
VERNAL, UTAH - 84078

SCALE 1" = 1000'	DATE 11-10-81
PARTY RK BK LZ	REFERENCES GLO PLAT
WEATHER FAIR	FILE NATURAL GAS CORP.

NATURAL GAS CORPORATION
OF
CALIFORNIA

BOP AND PRESSURE CONTAINMENT DATA

NGC #13-16 Federal
Section 16, T9S, R17E
Uintah County, Utah



1. BOP equip shall consist of a double gate, hydraulically operated preventer with pipe & blind rams or two single ram type preventers, one equipped w/pipe rams, the other w/blind rams.

2. BOP's are to be well braced w/ hand controls extended clear of substructure.

3. Accumulator to provide closing pressure in excess of that required w/sufficient volume to operate all components.

4. Auxiliary equipment: Lower kelly cock, full opening stabbing valve, 2½" choke manifold, pit level indicator &/or flow sensors w/alarms.

5. All BOP equipment, auxiliary equipment stand pipe & valves & rotary hose to be tested to the rate pressure of the BOP's at time of installation & every 30 days thereafter. BOP's to be mechanically checked daily.

6. Modification of hook-up or testing procedure must be approved in writing on tour reports by wellsite representative.

** FILE NOTATIONS **

DATE: Nov. 20, 1981

OPERATOR: natural Gas Corp of Calif.

WELL NO: State NGC #13-16

Location: Sec. 16 T. 9S R. 19E County: Uintah

File Prepared: ✓ Entered on N.I.D: ✓

Card Indexed: ✓ Completion Sheet: ✓

API Number 43-047-31129

CHECKED BY:

Petroleum Engineer: M.J. Minder 12-9-81

Director:

Administrative Aide: OK as Per Rule C-3,

APPROVAL LETTER:

Bond Required: ~~Yes~~ ✓ OK 12-9-81 Survey Plat Required:

Order No. O.K. Rule C-3

Rule C-3(c), Topographic Exception - company owns or controls acreage within a 660' radius of proposed site

Lease Designation St. Plotted on Map

Approval Letter Written

Hot Line P.I.

NELSON J. MARSHALL
Phone 789-0272

GENE STEWART
Phone 789-1795

LAWRENCE C. KAY
Phone 789-1125

Uintah Engineering & Land Surveying

P.O. BOX Q
VERNAL, UTAH 84078

OFFICE LOCATION
85 SOUTH 200 EAST

PHONE 789-1017

November 30, 1981

Utah State
Dept. of Natural Resources
Oil & Gas Division
4241 State Office Bldg.
Salt Lake City, UT 84114

Dear Mr. Minder,

Due to problems we have encountered with the Bureau of Land Management, and also due to the topography of the area we are requesting a variance in spacing for the following location.

Diamond Shamrock Pariette Bench #32-8

Section 8, T9S, R19E, S.L.B.& M. (See attached plat for footages from Section lines). In this area the B.L.M. is creating a migratory bird refuge, therefore we must work around their project as best we can.

Your attention to this matter is greatly appreciated.

Sincerely,

Gene Stewart

Gene Stewart

GS:sh

December 9, 1981

Natural Gas Corp. of Calif.
85 South 200 East
Vernal, Utah 84078

RE: Well No. State NGC #13-16,
Sec. 16, T. 9S, R. 19E,
Uintah County, Utah

Insofar as this office is concerned, approval to drill the above referred to oil well is hereby granted in accordance with Rule C-3, General Rules and Regulations and Rules of Practice and Procedure.

Should you determine that it will be necessary to plug and abandon this well, you are hereby requested to immediately notify the following:

MICHAEL T. MINDER - Petroleum Engineer
Office: 533-5771
Home: 876-3001

Enclosed please find Form OGC-8-X, which is to be completed whether or not water sands (acquifers) are encountered during drilling. Your cooperation in completing this form will be appreciated.

Further, it is requested that this Division be notified within 24 hours after drilling operations commence, and that the drilling contractor and rig number be identified.

The API number assigned to this well is 43-047-30129.

Sincerely,

DIVISION OF OIL, GAS AND MINING

Cleon B. Feight
Director

CBF/db
CC: State Lands

DIVISION OF OIL, GAS AND MINING

SPUDDING INFORMATION

NAME OF COMPANY: NATURAL GAS CORP. OF CALIFORNIA

WELL NAME: Pleasant Valley #13-16

SECTION NWSW 16 TOWNSHIP 9S RANGE 19E COUNTY Uintah

DRILLING CONTRACTOR Olsen

RIG # 5

SPUDDED: DATE 1-16=82

TIME 9:15 PM

HOW Rotary

DRILLING WILL COMMENCE

REPORTED BY Bidd Ryan

TELEPHONE # 789-4573

DATE 1-21-82 SIGNED DB

NATURAL GAS CORPORATION OF CALIFORNIA

85 South 200 East
Vernal, Utah 84078
(801) 789-4573

January 22, 1982

RECEIVED
JAN 26 1982
DIVISION OF
OIL, GAS & MINING

Mr. Michael T. Minder
Division of Oil, Gas & Mining
4241 State Office Building
Salt Lake City, UT 84114

Mr. E. W. Guynn
Geological Survey-Conservation Div.
2000 Administration Bldg.
1745 West 1700 South
Salt Lake City, UT 84104

Mr. Bob Gilmore
DeGolyer & MacNaughton
No. 1 Energy Square
Dallas, TX 75206

Re: NGC #13-16 State
NW SW Section 16, T9S, R19E
Uintah County, UT
Pleasant Valley Prospect

Gentlemen:

Attached are copies of Form OGC-1b, Sundry Notices and Reports on Wells, Report of Spud Date, for the above referenced well.

Sincerely,

Wm Ryan

William A. Ryan
Petroleum Engineer

/kh

Attachments

cc: Operations
C. T. Clark
E. R. Henry
S. Furtado

Form OGC-1b

SUBMIT IN TRIPLICATE*
(Other instructions on reverse side)

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS, AND MINING

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

5. LEASE DESIGNATION AND SERIAL NO.: ML-35713

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

1. OIL WELL [X] GAS WELL [ ] OTHER

7. UNIT AGREEMENT NAME:

2. NAME OF OPERATOR: Natural Gas Corporation of California

8. FARM OR LEASE NAME: Pleasant Valley

3. ADDRESS OF OPERATOR: 85 South 200 East, Vernal, UT 84078 Telephone 801-789-4573

9. WELL NO.: 13-16 State

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface: 800' FWL, 2122' FSL, Section 16, T.9S, R.19E NW¼ SW¼

10. FIELD AND POOL, OR WILDCAT: Wildcat

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Section 16, T.9S, R.19E

14. PERMIT NO.: 43-047-31128

15. ELEVATIONS (Show whether DF, RT, GR, etc.): 4705' GR

12. COUNTY OR PARISH: Uintah

13. STATE: Utah

16. **Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data**

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	[ ]	PULL OR ALTER CASING	[ ]	WATER SHUT-OFF	[ ]	REPAIRING WELL	[ ]
FRACTURE TREAT	[ ]	MULTIPLE COMPLETE	[ ]	FRACTURE TREATMENT	[ ]	ALTERING CASING	[ ]
SHOOT OR ACIDIZE	[ ]	ABANDON*	[ ]	SHOOTING OR ACIDIZING	[ ]	ABANDONMENT*	[ ]
REPAIR WELL	[ ]	CHANGE PLANS	[ ]	(Other)			[ ]
(Other) Report of Spud Date			[ ]	(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)			

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.) *

Operator reports the spudding of this well on January 16, 1982 at 9:15 p.m. with Olsen #5 drilling rig.

18. I hereby certify that the foregoing is true and correct

SIGNED Wm Ryan William A. Ryan TITLE Petroleum Engineer DATE 1/22/82

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

cc: Div. OG&M; USGS; DeGolyer; Operations; CTClark; ERHenry; S. Furtado

*See Instructions on Reverse Side

A GEOSCIENCE EXTENSION OF XCO

910 Sixteenth Street, #522, Denver, Colorado 80202 (303) 893-8138

RECEIVED
FEB 25 1982
DIVISION OF
OIL, GAS & MINING

NATURAL GAS CORP. OF CALIFORNIA

PLEASANT VALLEY 13 - 16

SECTION 16 - T9S - R19E

UINTAH COUNTY, UTAH

GEOLOGIST: Richard G. Steele,
GX Consultants

RESUME

OPERATOR:	Natural Gas Corp. of California
WELL NAME & NUMBER:	Pleasant Valley 13-16
LOCATION:	Section 16 - T9S - R19E
COUNTY:	Uintah
STATE:	Utah
SPUD DATE:	January 16, 1982
COMPLETION DATE (TD):	February 4, 1982
ELEVATIONS:	4,700' GL 4,712' KB
TOTAL DEPTH:	7,462' LOGS 7,475' DRLR
CONTRACTOR:	Olson Drilling Co.
RIG:	#5
TYPE RIG:	Fixed Mast Double - 8,500'
PUMPS:	D175 Emsco 5½ x 14 D500 Emsco 5½ x 16
GEOLOGIST:	Richard G. Steele, GX Consultants
ENGINEER:	Milow Weisman
TOOL PUSHER:	Bill Johnson
TYPE DRILLING MUD:	Fresh Water and LSND
MUD COMPANY:	Crown Mud Co.
MUD ENGINEER:	Ray Love
HOLE SIZES:	7-7/8" 500' - T.D.
CASING:	8-5/8" set @ 500'
MUD LOGGING BY:	Analex
TYPE UNIT:	One man unit
CORE INTERVALS:	#1: 4,238' - 4,242', #2: 4,242' - 4,302', #3: 4,302' - 4,328', #4: 5,350' - 5,393'
DST DEPTHS:	--
DST COMPANY:	No DSTs
ELECTRIC LOGS BY:	Schlumberger
TYPE LOGS RUN:	DIL-GR T.D. - surface csg FDC-CNL T.D. - surface csg Sonic T.D. - surface
LOGGING ENGINEER:	--
BOTTOM FORMATION:	Wasatch
WELL STATUS:	Awaiting completion

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SUMMARY AND CONCLUSIONS

The Natural Gas Corp. Pleasant Valley #13-16 was spudded on February 4, 1982. The primary objectives were the Douglas Creek Sandstone, Basal Green River Lime, and Wasatch Tongue.

Core #1 (4,238' - 4,242', barrel jammed) and Core #2 (4,242' - 4,302') recovered 52' of gy-gygn, dkgy SHALE w/ occasional thin Sandstone interbeds. From 4,290' - 4,302', 12' of lt-gy, wh, rr dkgy, frm, mod srtg, vf gr, sbang, calc cmt, w/ occ vis oil stn, dull yel-orng flor, inst. strmg yell mlky cut, 10 - 15% Ø, g perm. The Douglas Creek Sandstone was fractured w/ a strong petroliferous odor. Core #3 (4,302' - 4,328') recovered the remaining Sandstone (4,302' - 4,305') with gy-gygn Shale, the remainder of the interval. Core Analysis revealed water saturation - 30% and porosity - 15 - 20% through the main Douglas Creek Sandstone.

Drilling proceeded down to 5,350' at which point a 43' core (Core #4 - 5,350'- 5,393', barrel jammed) was taken. From 5,356' - 5,360' a ltbrn-brn, frm, mod srtd, vf-fgr, sbang, sl calc Sandstone was recovered. The sand was oil stain w/ a strong petroliferous odor. At 5,365' (-653') the Green River Lime was encountered. The recovered Limestone was brn-dkbrn, hd, micxln, micrite-bio micritic with occasional oolites. No sample show was observed in the Limestone.

The Wasatch Formation, 5,625' (-913') had two recorded gas shows. The first show at 6,606' - 6,621', the ROP increased from 3 - 4 minutes per foot to 1 minute per foot with a gas increase from 180 - 800 units. The second show occurred from 6,864' - 6,872' with an associated gas show from 200 to 750 units. The sand from both shows was wh-clr, frm, wh srtd, f-mgr, sbang-sbrd, calc, fr-g Ø, NSFOC. The Wasatch Sand was not tested because it had already been determined to run pipe on the strength of show in the Douglas Creek Sandstone.

NOTE: See Log Analysis and Show Sheet.

FORMATION TOPS

FORMATION	NATURAL GAS CORPORATION PLEASANT VALLEY # 13-16 UINTAH COUNTY, UTAH
Green River	1,165 (+3,547)
Garden Gulch Mbr.	2,685 (+2,027)
Douglas Creek	4,240 (+472)
Black Sh. Facies	4,850 (-138)
Green River Ls.	5,365'(-653)
Wasatch	5,625 (-913)

WELL HISTORY

1982 DATE	12:01 A.M. DEPTH	ACTIVITIES
1-16	0	Rig up, spud w/ 7-7/8 bit, drlg cmt, drlg formation.
1-17	414	Drlg, rig service, drlg.
1-18	1,212	Drlg, rig service, drlg, survey, drlg, rig service.
1-19	2,038	Rig service, drlg, survey, drlg.
1-20	2,619	Drlg, rig service, drlg.
1-21	3,340	Drlg, rig service, drlg.
1-22	3,918	Drlg, rig service, trip out of hole for core, make up core barrel, trip in for Core #1.
1-23	4,238	Trip in hole, ream 90' to bottom, coring core jammed, trip out, lay down 4' core, trip in for Core #2, coring.
1-24	4,259	Coring, trip out, lay down core #2, trip in for Core #3, coring.
1-25	4,310	Coring, trip out of hole, lay down Core #3, trip in hole, drlg.
1-26	4,500	Drlg.
1-27	4,970	Drlg, trip out for Core #4.
1-28	5,350	Trip out for Core #4, pick up core barrel, trip in , cut core #4, core jammed @ 5,393', trip out w/ Core #4.
1-29	5,393	Lay down Core #4, trip in hole, drlg.
1-30	5,566	Drlg.
1-31	5,930	Drlg.
2-1	6,330	Drlg.
2-2	6,722	Drlg, trip out for Bit #5, test collars.
2-3	6,900	Trip in w/ N.B. #6, drlg.
2-4	7,222	Drlg, T.D. 7,475' @ 9:00 P.M., trip out for logs.
2-5	7,475	Trip out for logs, run logs.

MUD RECORD

MUDDED UP AT 4,200 ON 1-23-82

1982 DATE	DEPTH	WT.	F.VIS	P.VIS	YIELD	GEL STRNT	PH	FILTR	CK.	ALKA	SALT	CHLO	CALCIUM	GYP/ SAND	SOLID/ %WTR.	CUMULATIVE COST
1-23	4241	8.8	32	2	2	0/0	9.5	12.4	1/32	--	--	300	175	TR	1	3654
1-24	4279	8.8	31	4	3	2/5	9.5	13.2	1/32	--	--	850	250	TR	2½	5554
1-25	4324	8.7+	32	4	6	3/8	9.5	12	1/32	--	--	1400	250	TR	2½	715[illegible]
1-26	4542	8.8	29	3	3	2/3	9	22.5	1/32	--	--	1050	175	TR	2	8230
1-27	5122	8.5	27	--	--	--	9	--	--	--	--	750	220	TR	TR	8587
1-28	5350	8.8	34	8	12	5/11	10	14	1/32	--	--	1400	100	TR	2½	12013
1-29	5393	8.6	29	3	2	0/2	10	14.8	1/32	--	--	1600	50	TR	TR	16481
1-30	5635	8.8	27	2	2	0/1	9.5	--	--	--	--	2000	75	TR	TR	16910
1-31	6023	8.5	27	--	--	--	10	--	--	--	--	1300	--	TR	TR	17580
2-1	6436	8.4	27	--	--	--	9	--	--	--	--	1400	200	TR	--	18059
2-2	6786	8.4	27	--	--	--	9	--	--	--	--	1400	200	TR	TR	1839[illegible]
2-3	6936	8.4	27	--	--	--	9	--	--	--	--	1500	300	TR	--	18627
2-4	7331	8.7	27	--	--	--	8	20	2/32	--	--	1400	300	TR	--	19026

BIT RECORD

BIT NO.	MAKE	TYPE	SIZE	DEPTH IN	DEPTH OUT	FOOTAGE	HOURS
1	STC	F-3	7-7/8		4,238	3,894	122½
2	MC	20 (Core Bit)	7-7/8		4,328	90	--
3	SEC	M84F	7-7/8		5,350	1,026	43¼
4	MC	20 (Core Bit)	7-7/8		5,393	43	13
5	SEC	M84F	7-7/8		6,897	1,502	97
6	SEC	S88F	7-7/8		7,475	578	45

DRILLING FUNCTIONS

(Include air pressure if air drilled hole)

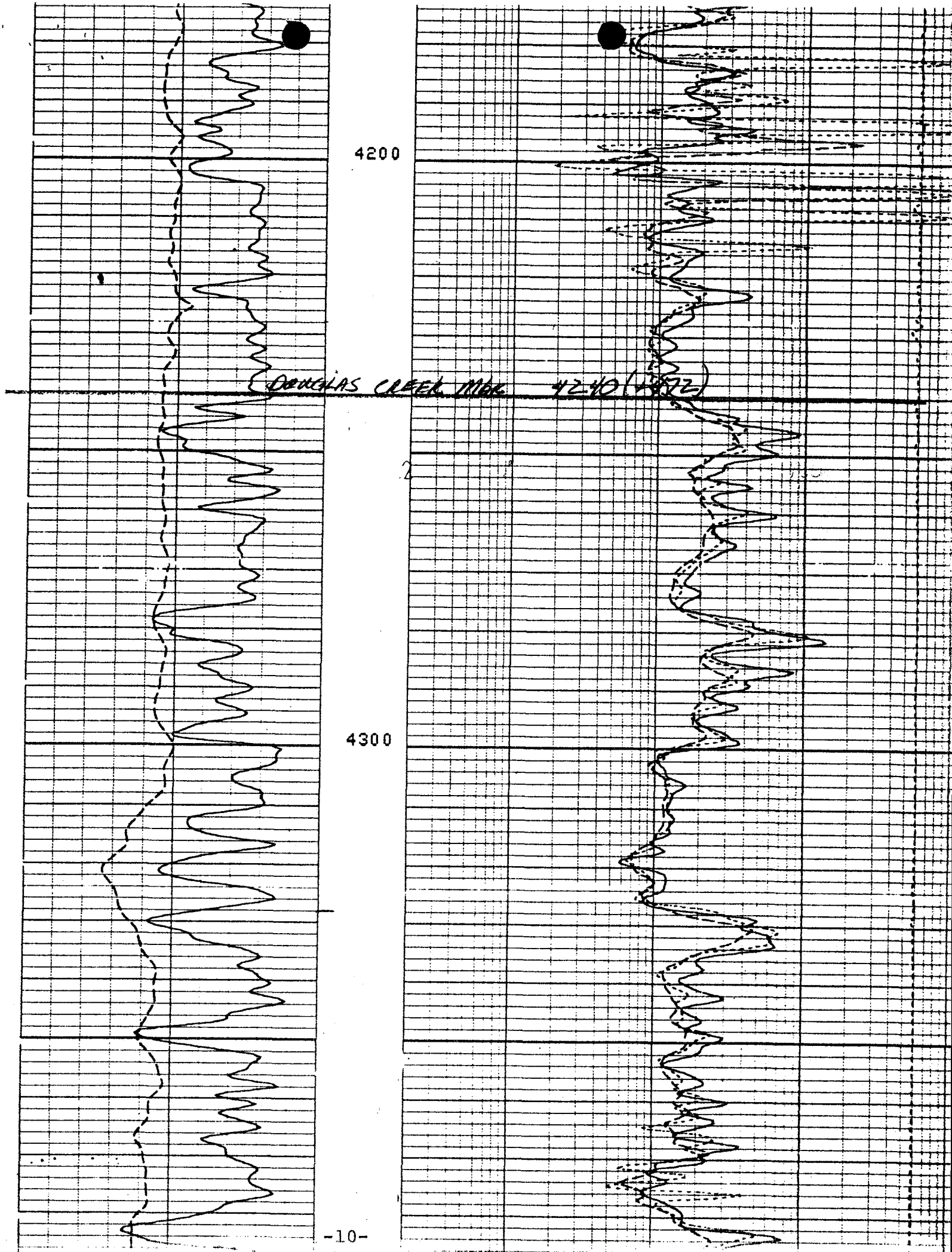
DATE	DEPTH	W.O.B.	R.P.M.	P.P.
	500	20/25	70	1,000
	1,000	25/30	70	1,000
	1,500	30	70	1,000
	2,000	30	70	1,000
	2,500	30	70	1,000
	3,000	30	70	1,000
	3,500	30	75	1,100
	4,000	30	75	1,100
	4,238	30	75	1,100
	4,500	35	75	950
	5,000	35	75	950
	5,350	35	75	1,200
	6,000	35	72	950
	6,500	35	75	950
	7,000	30/35	60/75	950
	7,475	35	60	1,200

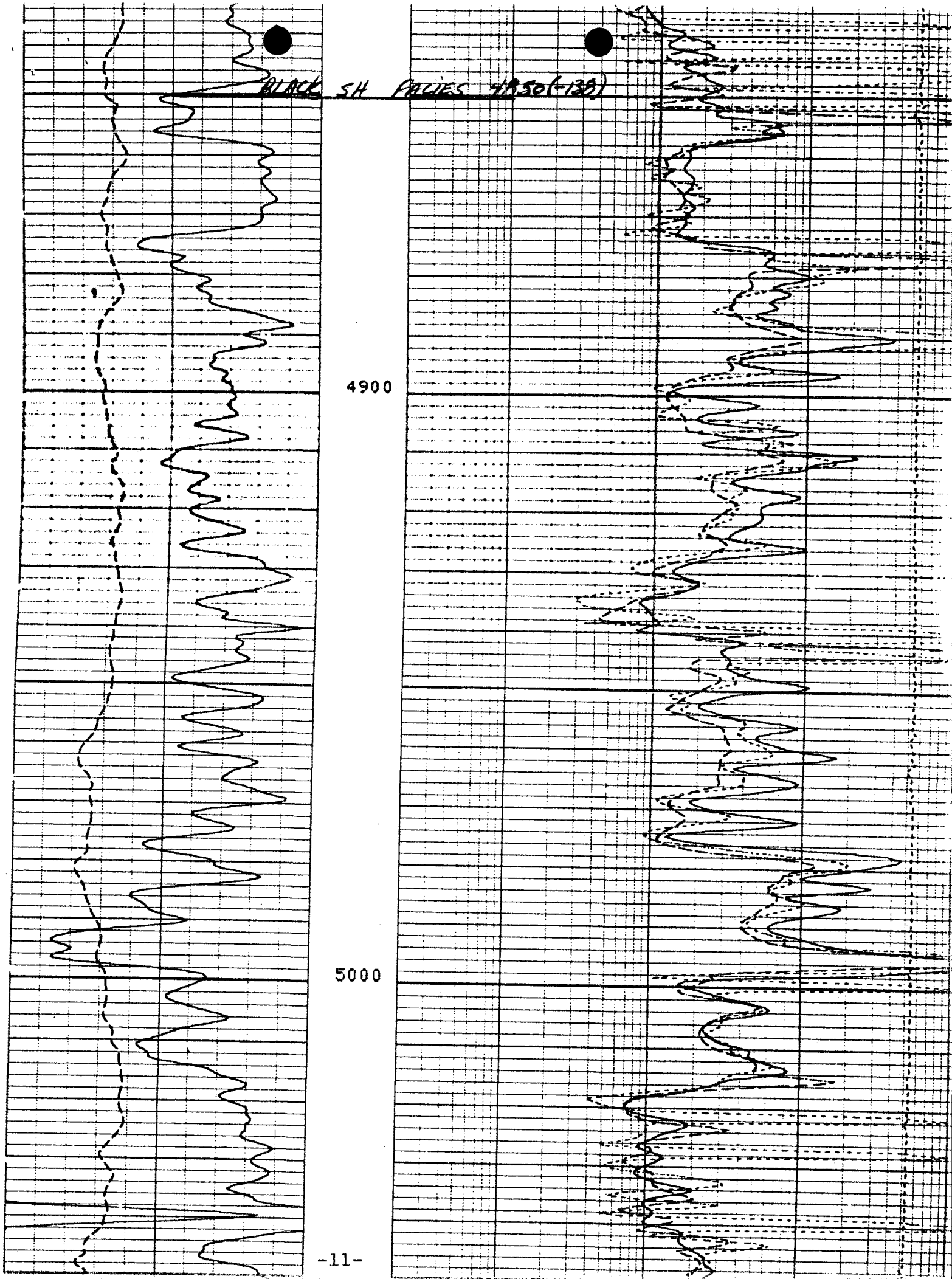
DIRECTIONAL SURVEYS

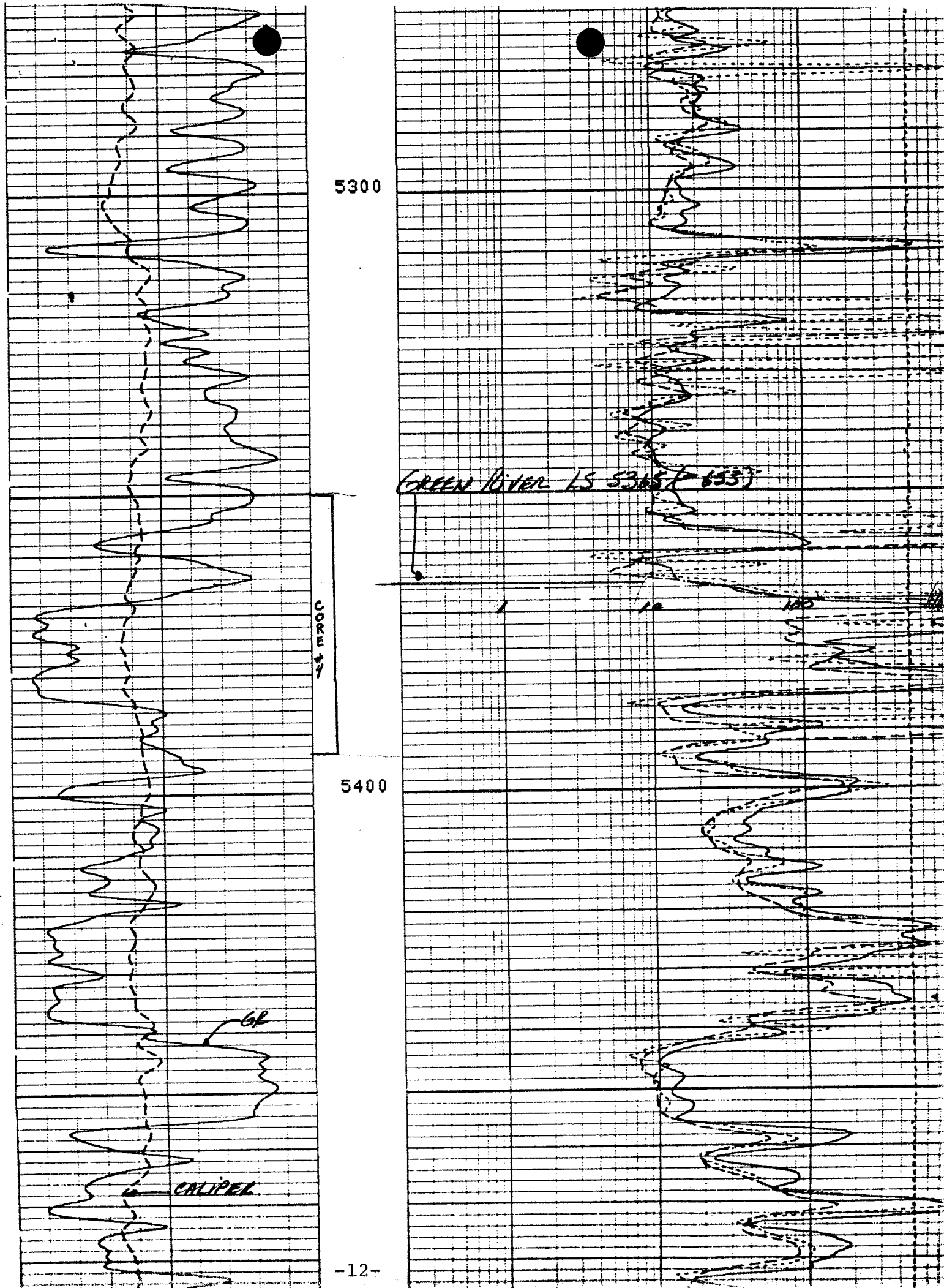
DEPTH	DEVIATION	DEPTH	DEVIATION	DEPTH	DEVIATION
500	--				
1,000	--				
1,500	--				
2,000	--				
2,500	--				
3,000	1¼° @ 3,141				
3,500	--				
4,000	--				
4,238	1°				
4,500	--				
5,000	--				
5,350	1°				
6,000	--				
6,500	--				
7,000	--				
7,475	--				

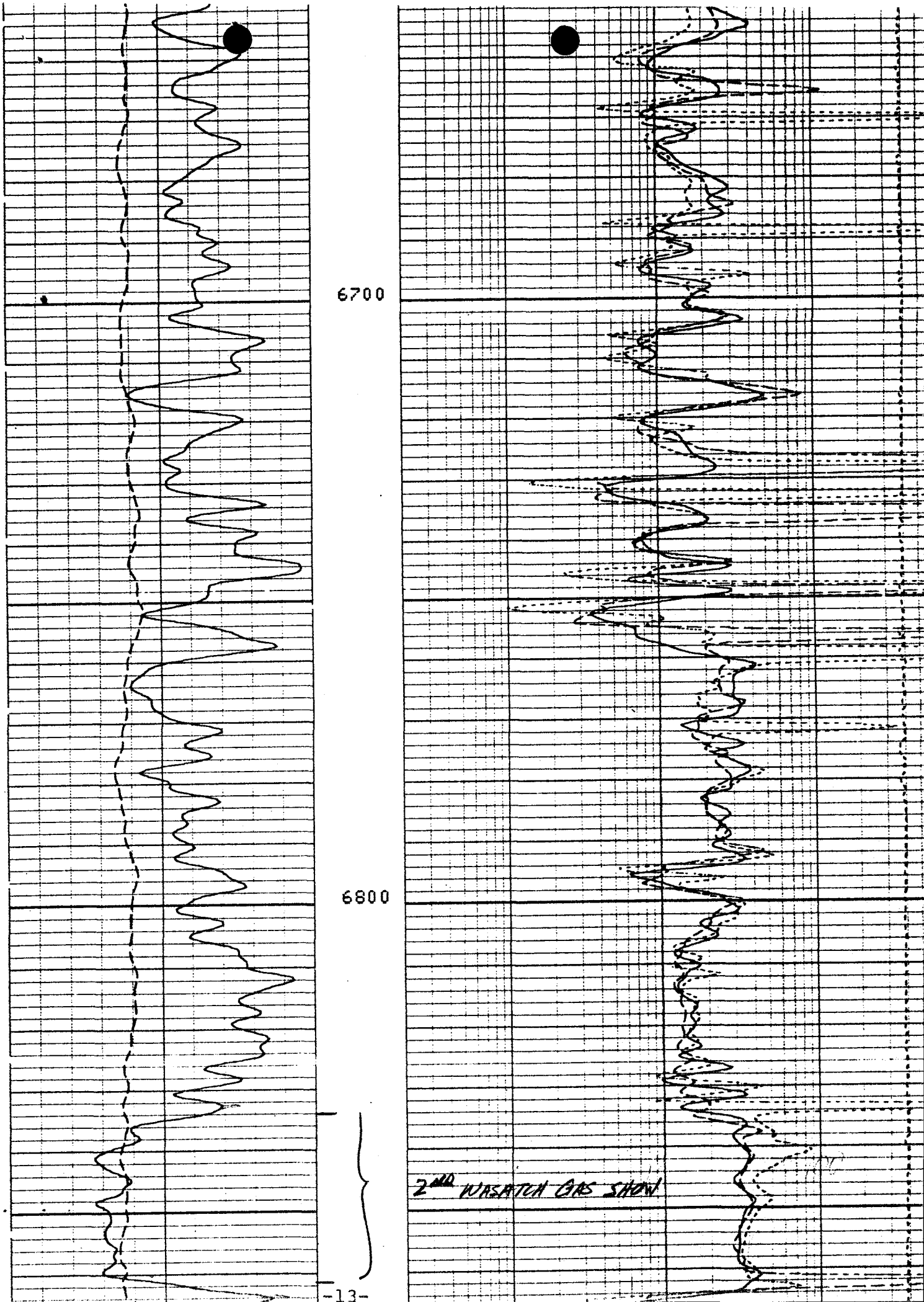
SHOW REPORT & LOG ANALYSIS

INTERVAL	FORMATION	Rw	Rt	ØN	ØD	ØAVG	Sw%	TG	C1	C2	C3	C4
4,297 - 4,300	Douglas Creek	0.15	30	12	12	12%	58%	200 u.	20000			
5,356 - 5,360	Green River Lime	.2	110	20	16	18%	24%	260 u.	25000 ppm			
6,590 - 6,606	Wasatch	.2	40-90	14-8	8-14	11%	52%	800 u.	80000 ppm			
6,840 - 6,860	Wasatch	.2	25-50	14-11	8-14	12%	60%	750 u.	74000 ppm			


4200
DOUGLAS CREEK MBR 4240 (-1072)
4300


BLACK SH FACIES 7850(-138)
4900
5000


5300
GREEN RIVER LS 5365 (-653)
CORE #1
5400
GR
CALIPER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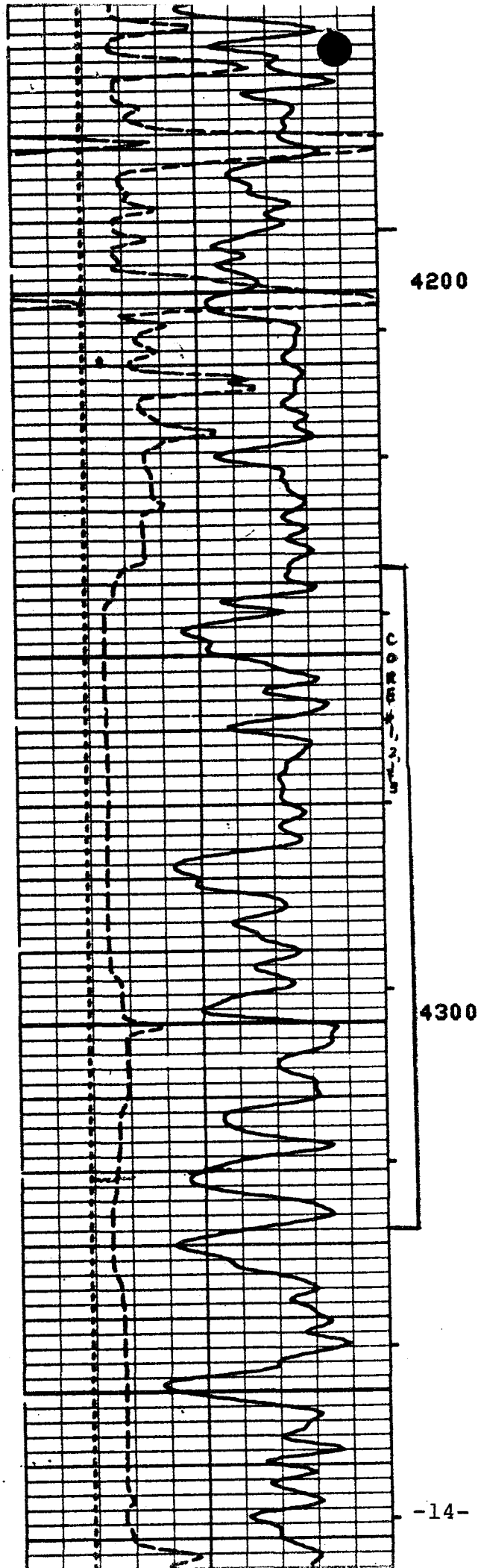
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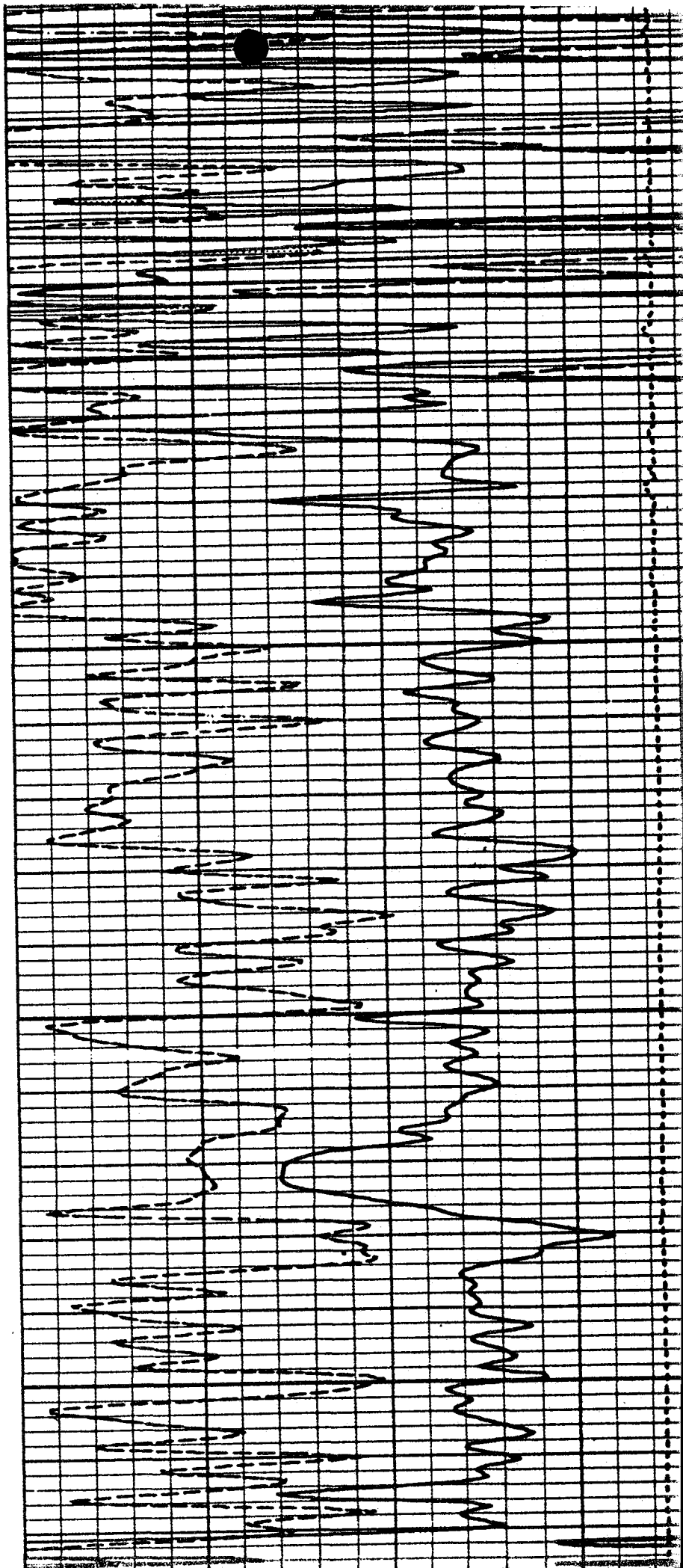

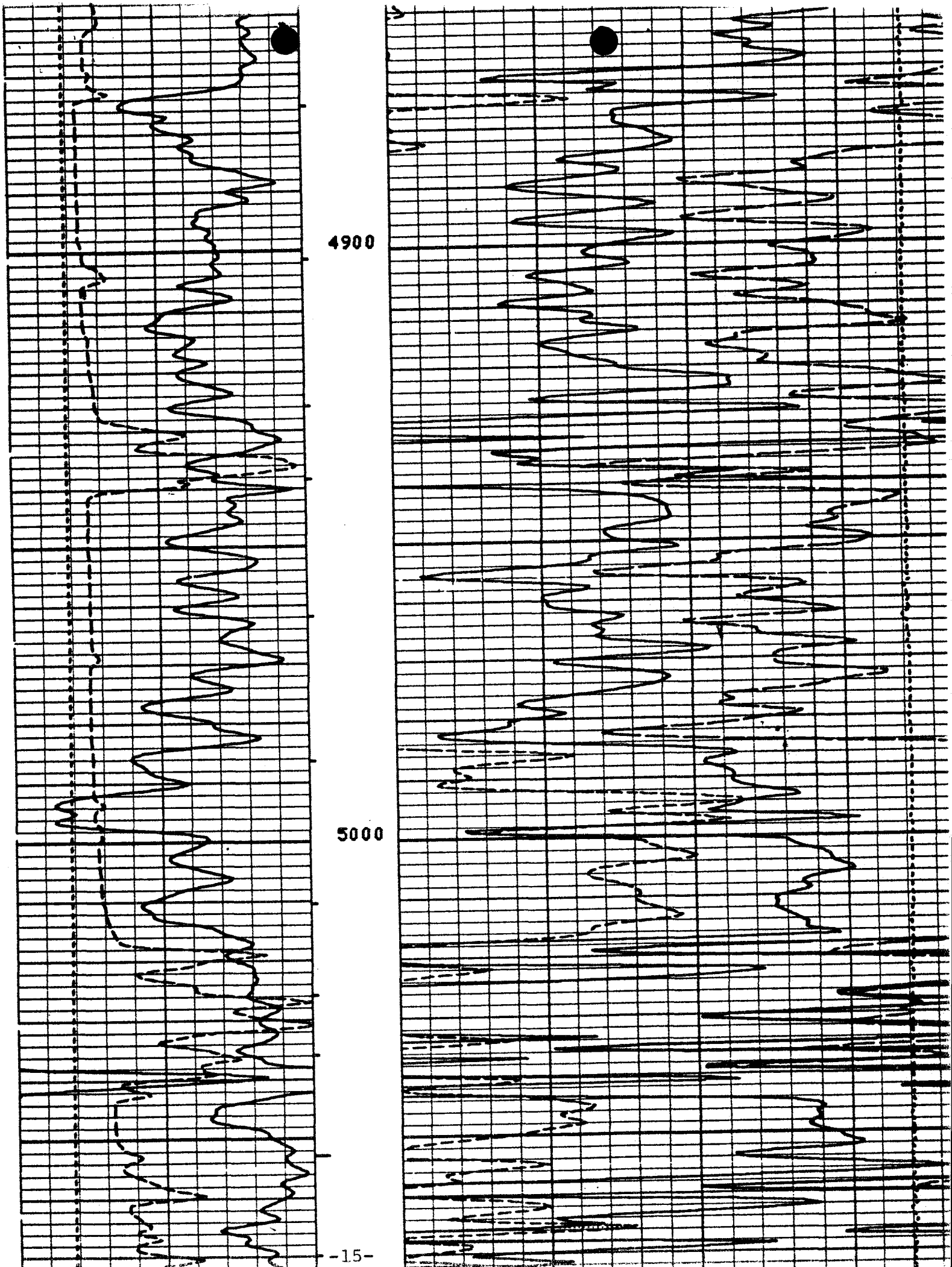
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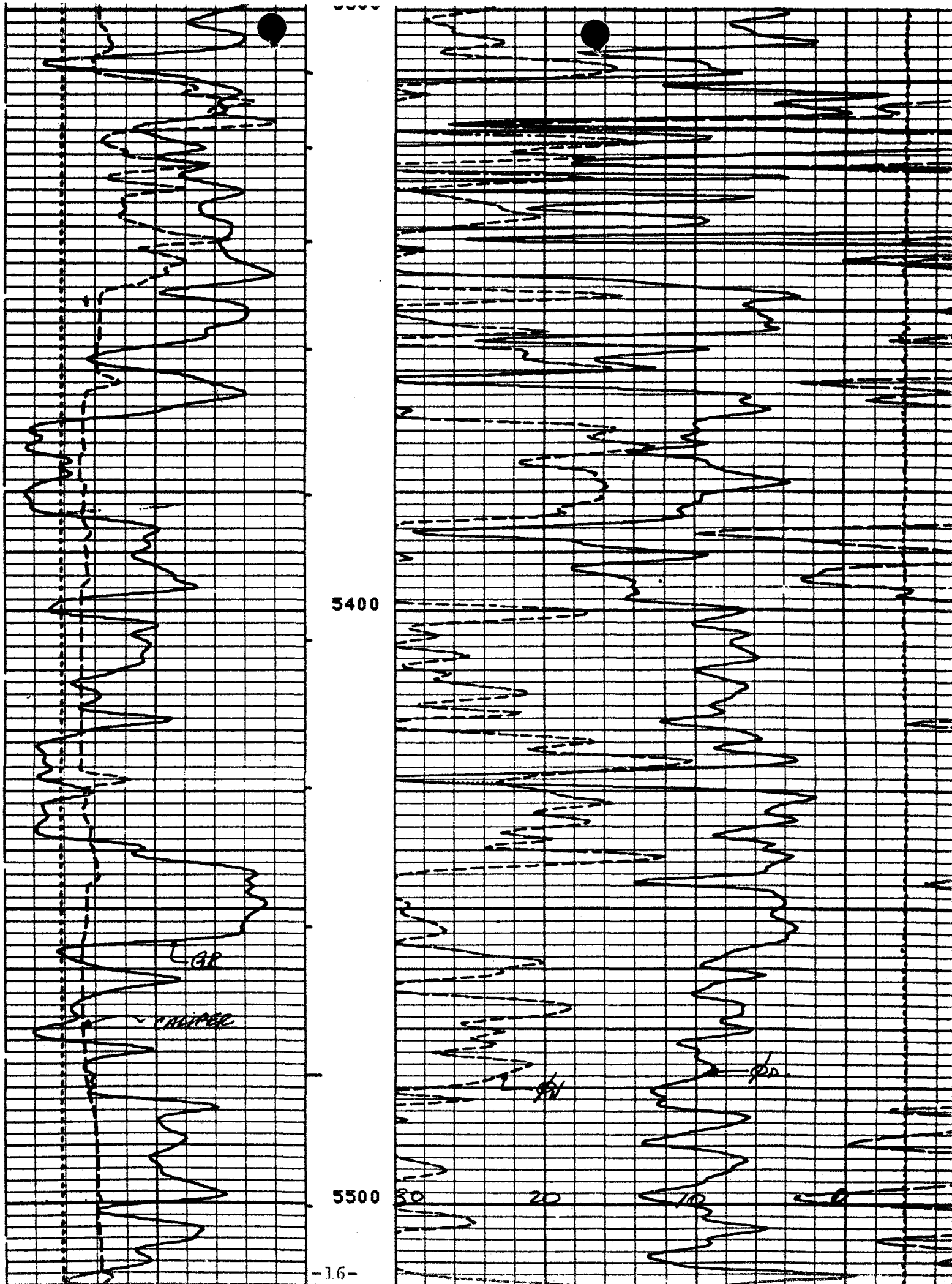
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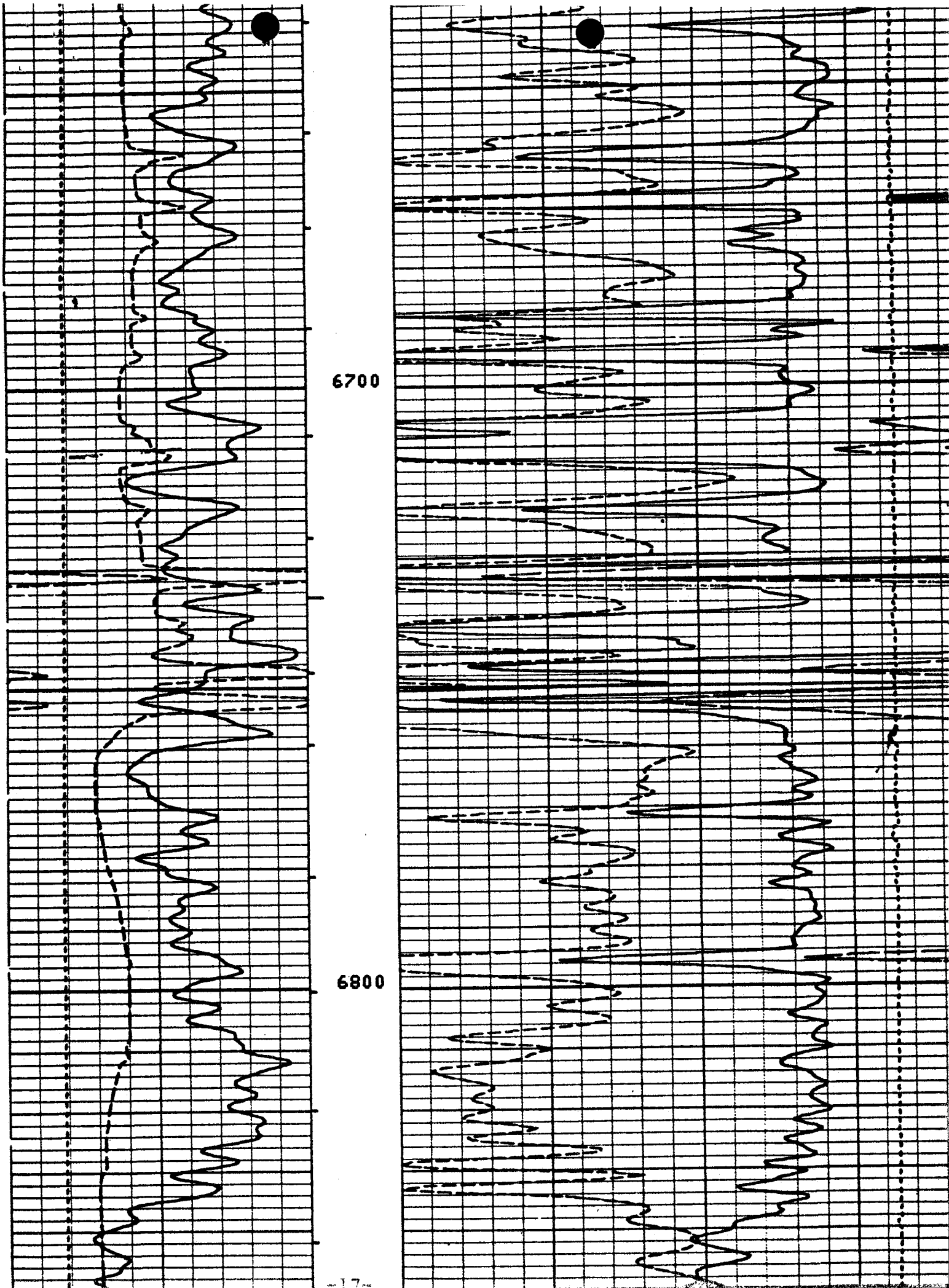
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LITHOLOGY

420- 450	SHALE - ltgy-gybrn, plty, sl - m calc.
450- 480	SHALE - as above. SANDSTONE - clr-wh, f-vf gr, fri, wsrt sbang, NSOFC.
480- 510	SHALE and SANDSTONE - as above.
510- 540	SHALE - ltgy, gybrn, plty, sl-m calc.
540- 570	SILTSTONE - gy gybn, frm, n-sl calc.
570- 600	SHALE - ltgy, gybrn, plty, sl-m calc.
600- 630	SHALE - as above. SANDSTONE - clr-wh, f gr, wsrt fri, sbang, NSOFC.
630- 660	SHALE - as above. SILTSTONE - gy gygn, frm, n calc.
660- 690	SANDSTONE - wh-clr, f-vf gr, fri, wsrt sbang, NSOFC.
690- 720	SANDSTONE - as above.
720- 750	SANDSTONE - clr-wh, f gr, wsrt fri, sbang, NSOFC.
750- 780	SANDSTONE - as above. SHALE - ltgy-gy gybrn, plty, calc.
780- 810	SILTSTONE - gygn, frm, n calc.
810- 840	SHALE - gy, gybrn, frm, plty, m calc.
840- 870	SHALE - as above.
870- 900	SHALE - as above.
900- 930	SANDSTONE - wh-clr, f gr, wsrt fri, sbang, NSOFC.
930- 960	SANDSTONE - as above. SHALE - ltgy, gybrn, frm, plty-blky, calc.
960- 990	SHALE - as above.
990-1,020	SANDSTONE - wh-clr, f gr, wsrt fri, sbang, NSOFC.
1,020-1,050	SANDSTONE - as above.
1,050-1,080	SANDSTONE - as above.
1,080-1,110	SANDSTONE - as above. LIMESTONE - dk brn, frm-hd, crypxln, v arg, p Ø.
1,110-1,140	LIMESTONE - as above.

** GREEN RIVER FORMATION - 1,165 (+3,547)

LITHOLOGY (CONTINUED)

1,140-1,170	LIMESTONE - as above. SHALE - lt gy, gybrn, frm, plty, calc.
1,170-1,200	LIMESTONE - as above. SHALE - as above.
1,200-1,230	SHALE - ltgy, gybrn, frm, plty-blky, sl calc.
1,230-1,260	SHALE - as above.
1,260-1,290	SHALE - ltgy, gybrn, frm, blky, sl calc.
1,290-1,320	SHALE - as above.
1,320-1,350	SHALE - as above.
1,350-1,380	SHALE - ltgy, gybrn, frm, plty, sl calc.
1,380-1,410	SHALE - as above.
1,410-1,440	SHALE - brn, rdbrn, frm, blky-plty, sl calc.
1,440-1,470	SHALE - as above.
1,470-1,500	SHALE - brn, rdbrn, frm, blky-plty, sl calc, tr calc.
1,500-1,510	LIMESTONE - ltgy, wh, tan, hd, micxln.
1,510-1,520	No Sample.
1,520-1,530	LIMESTONE.
1,530-1,540	LIMESTONE.
1,540-1,550	LIMESTONE - tan, ltbrn, hd, micxln, m arg.
1,550-1,560	TR LIMESTONE - as above. SHALE - brn, ltbrn, frm-hd, blky, occ plty, sl calc, v arg, occ LIMESTONE,calcite.
1,560-1,570	SHALE - brn, rdbrn, frm, blky, plty in pt, sl calc. LIMESTONE - calcite, rthy.
1,570-1,580	SHALE - as above.
1,580-1,590	SHALE - as above. TR LIMESTONE.
1,590-1,600	SHALE - as above, abnt LIMESTONE, tr LIMESTONE.
1,600-1,610	SHALE - as above, gy ltgy, ltgn, sft, blky, v calc.
1,610-1,620	SHALE - as above.
1,620-1,630	SHALE - as above.

LITHOLOGY (CONTINUED)

1,630-1,640	SHALE - as above.
1,640-1,650	No Sample.
1,650-1,660	SHALE - as above.
1,660-1,670	No Sample.
1,670-1,680	SHALE - rdbrn, frm, plty, sl calc, arg. SHALE - gy, lt gy, lse calcite.
1,680-1,690	SHALE - as above.
1,690-1,700	SHALE - as above, calcite.
1,700-1,710	LIMESTONE - dk brn, brn, lt brn, frm-hd, blk, crypxln, micrite, v arg, shaly in pt, v p Ø.
1,710-1,720	LIMESTONE - as above.
1,720-1,730	LIMESTONE - as above. TR SHALE - ltgy-wh, sft, calc, Bent.
1,730-1,740	LIMESTONE and SHALE - as above.
1,740-1,750	LIMESTONE and SHALE - as above.
1,750-1,760	LIMESTONE and SHALE - as above (Metal inclusions, not PYRITE, silver colored, metalic custer).
1,760-1,770	SHALE and LIMESTONE - as above.
1,770-1,780	SHALE - gybrn, rebrn, frm, blky, calc, limy in pt.
1,780-1,800	SHALE - as above. LIMESTONE - gybrn, rdbrn, hd, crypxln, micrite, v arg, v rthy (shaly).
1,800-1,810	No Sample.
1,810-1,820	SHALE - as above.
1,820-1,830	SHALE and LIMESTONE - as above, abnt, calcite
1,830-1,840	SHALE - as above.
1,840-1,850	SHALE and LIMESTONE - lt brn, frm-hd, blky, crypxln, micrite, m-v arg, abnt LIMESTONE, calcite, p Ø.
1,850-1,860	60% SHALE - med-dkbrn, firm, n-sbfis, blky-ireg, mod-v calc. 40% LIMESTONE - lt-medbrn, hrd, micxln, micrite, v arg.

LITHOLOGY (CONTINUED)

1,860-1,870	As above, tr calc xl.
1,870-1,880	80% SHALE - sl mnrl flor. 20% LIMESTONE - as above.
1,880-1,890	60% SHALE. 40% LIMESTONE - as above.
1,890-1,900	As above.
1,900-1,910	50% LIMESTONE. 50% SHALE - as above, sl mrnl flor.
1,910-1,920	60% LIMESTONE - lt-med brn, sft-frm, micrxln, micrite, v arg, n vis Ø. 40% SHALE - med-dkgy, frm-hrd, n-sbfis, blky-ireg, n - sl calc, sl mnrl flor.
1,920-1,930	As above.
1,930-1,940	60% SHALE - sbfis-fis, blky-plty, as above. 40% SHALE - as above, ltgy, calc.
1,940-1,950	As above, f-calc xl.
1,950-1,960	As above.
1,960-1,970	As above.
1,970-1,980	60% LIMESTONE. 40% SHALE - as above.
1,980-1,990	As above.
1,990-2,000	As above.
2,000-2,010	As above.
2,010-2,020	50% SHALE - lt-rdbrn, sft, sbfis-fis, plty-splty. 50% SHALE - med-dkbrn, frm, n-sbfis, blky-ireg, calc.
2,020-2,030	60% ltbrn, SHALE. 40% dkbrn, SHALE, tr calc xl.
2,030-2,040	SHALE - 60% dk, 40% lt, tr LIMESTONE.
2,040-2,050	As above, 10% LIMESTONE.
2,050-2,060	As above.
2,060-2,070	As above.
2,070-2,080	As above.
2,080-2,090	As above, sl mnrl flor.

LITHOLOGY (CONTINUED)

2,090-2,100	As above, tr LIMESTONE.
2,100-2,110	As above, sl mnrl flor.
2,110-2,120	SHALE - 60% dkbrn, 40% ltbrn.
2,120-2,130	As above, dkbrn-mod, calc.
2,130-2,140	As above.
2,140-2,150	As above.
2,150-2,160	As above.
2,160-2,170	As above.
2,170-2,180	SHALE - brn, ltbrn, frm, blky, arg, calc, occ v limy.
2,180-2,190	As above.
2,190-2,200	No Sample.
2,200-2,210	SHALE - lt tan, lt brn, occ dkbrn, frm, blky, occ plty, v calc, occ limy.
2,210-2,220	SHALE - as above.
2,220-2,230	SHALE - as above.
2,230-2,240	SHALE - as above.
2,240-2,250	SHALE - as above.
2,250-2,260	SHALE - brn, dkbrn, occ tan, frm, blky, calc, occ limy.
2,260-2,270	SHALE - as above.
2,270-2,280	SHALE - as above.
2,280-2,290	DOLOMITE - brn, dkbrn, micxln, arg, v p Ø, frosted gr.
2,290-2,300	DOLOMITE - as above.
2,300-2,310	DOLOMITE - as above. SHALE - gybrn, ltbrn, sft-frm, blky, sl calc.
2,310-2,320	TR DOLOMITE - as above. SHALE - as above.
2,320-2,340	DOLOMITE and SHALE - as above.
2,340-2,350	DOLOMITE and SHALE - as above. TR DOLOMITE - brn, ltbrn, hd, micxln, sl arg, p Ø, fnt orng flor, m-p strm cut, yl-gn stn.

LITHOLOGY (CONTINUED)

2,350-2,360	DOLOMITE - as above. TR SHALE.
2,360-2,370	DOLOMITE - as above, tr oil stn.
2,370-2,380	DOLOMITE - as above, tr oil.
2,380-2,390	DOLOMITE - as above. SHALE - brn, dkbrn, sft-frm, blky, arg, slty oil shale.
2,390-2,400	SHALE - as above, oil shale.
2,400-2,410	SHALE - as above, oil shale.
2,410-2,420	SHALE - as above, oil shale, tr DOLOMITE.
2,420-2,430	SHALE - brn, rdbrn, sft-frm, blky, plty in pt, sl calc, oil shale.
2,430-2,440	SHALE - as above, oil shale.
2,440-2,450	SHALE - as above, oil shale. DOLOMITE - dkbrn, brn, frm-hd, blky, micxln, p Ø.
2,450-2,460	As above.
2,460-2,470	SHALE - as above, tr oil shale. DOLOMITE - as above.
2,470-2,480	As above.
2,480-2,490	SHALE - lt-medbrn, sft-frm, sbfis-fis, blky-ireg, occ plty, sl calc, oil shale, w/ good strmg mlky cut. DOLOMITE - dkbrn-gybrn, hrd, micxln, micrite, arg, n vis Ø.
2,490-2,500	As above, tr mlky strm cut.
2,500-2,510	SHALE - lt-med brn, blky-plty, as above, good cut. DOLOMITE - as above.
2,510-2,520	As above.
2,520-2,530	As above, less oil shale, no cut.
2,530-2,540	SHALE - lt-med brn-gybrn, sft-frm, sbfis-fis, blky-plty, sl calc, tr oil shale. DOLOMITE - a/a.
2,540-2,560	SHALE - ltbrn, occ redbrn, a/a, tr oil shale. DOLOMITE - med-dkbrn, frm-hrd, micxln, micrite, mod arg, n vis Ø.

LITHOLOGY (CONTINUED)

2,560-2,570 SHALE - as above, strm -mlky cut, oil shale.

2,570-2,580 As above, p cut.

2,580-2,590 SHALE - ltbrn-redbrn, sft-frm, sbfis-fis, plty-splty, occ blky, sl calc, tr oil shale.

2,590-2,600 As above.

2,600-2,610 As above, f cut.

2,610-2,620 As above, f cut.

2,620-2,630 As above, f cut.

2,630-2,640 SHALE - lttan - ltbrn-gybrn, frm, sbfis-fis, plty-blky, sl calc, tr oil shale, good strmg mlky cut.

2,640-2,650 As above.

2,650-2,660 LIMESTONE - lt-medgy, sft-frm, crypto xln, micrite. sl arg, p Ø, strm mlky cut.

2,660-2,670 As above.

2,670-2,680 As above.

** GARDEN GULCH MEMBER - 2,685 (+2,027)

2,680-2,690 LIMESTONE - ltgy, sft-frm, crypto xln, micrite, p Ø.
SHALE - medbrn, frm, sbfis-fis, plty-blky, mod calc.
TR SANDSTONE - good strm mlky cut.

2,090-2,700 SANDSTONE - clr-wh-ltgy, mod - v fri, med-c gr, sbang-sbrd, p srt.
SHALE - ltgy, sft-frm, sbfis-fis, plty, mod calc, tr oil shale, oil stn, good cut.

2,700-2,710 As above, f cut.

2,710-2,720 As above, tr LIMESTONE, more SHALE - n-sl calc, good cut.

2,720-2,730 As above, good cut.

2,730-2,740 As above, f cut oil stn.

2,740-2,750 SHALE - as above, tr cut.

2,750-2,760 SHALE - gy, ltgy, gygn, brn, sft-frm, blky, n-sl calc, orng flor, no cut, no stn.

2,760-2,770 SHALE - as above.

LITHOLOGY (CONTINUED)

2,770-2,780	SHALE - as above.
2,780-2,790	SHALE - as above.
2,790-2,800	SHALE - gy gygn, sft-frm, blky, sl calc, tr yl-gn flor.
2,800-2,810	SHALE - as above.
2,810-2,820	SHALE - as above, dk brn, frm, plty-blky, n calc, abnt orng flor, p cut, p stn.
2,820-2,830	SHALE - as above, abnt calcite.
2,830-2,840	SHALE - gygn, sft-frm, blky, calc, tr flor.
2,840-2,850	SHALE - as above, tr SANDSTONE, oil stn.
2,850-2,870	SHALE - as above.
2,870-2,880	SHALE - as above.
2,880-2,890	SHALE - as above, tr SANDSTONE.
2,890-2,900	SHALE - buff, crm, ltbrn, gygn, occ dk brn, frm-sft, blky, calc, tr visible oil stn.
2,900-2,910	SHALE - as above.
2,910-2,920	SHALE - as above.
2,920-2,930	SHALE - as above, tr flor.
2,930-2,940	SHALE - ltgy, gygn, frm, blky, calc, occ sdy, tr orng flor.
2,940-2,950	SHALE - as above, brn, dkbrn, frm, plty, v calc, fnt, orng flor, oil shale.
2,950-2,960	SHALE - as above, tr DOLOMITE, crm, hd, micxln, p Ø.
2,960-2,990	SHALE - as above.
2,990-3,000	SHALE - as above. LIMESTONE - tan, crm, hd, plty, micxln, micrite, m arg, p Ø, fnt yl-gn flor, no cut, fnt orng stn. Abnt heavy oil seen @ 3,010 (floating in possum belly).
3,000-3,040	LIMESTONE - tan, crm, hd, plty, micxln, no vis Ø, abnt fnt, gn-yl flor, no cut, fnt orng stn.

LITHOLOGY (CONTINUED)

3,040-3,050	LIMESTONE - as above. SHALE - brn, dkbrn, frm, plty.
3,050-3,060	SHALE - gygn, lt gn, sft, blky, calc. TR LIMESTONE - as above.
3,060-3,070	SHALE - as above.
3,070-3,080	SHALE and LIMESTONE - as above, abnt free oil.
3,080-3,090	LIMESTONE - ltbrn, tan, crm, hd, plty, micxln, micrite, arg, p Ø, abnt free oil.
3,090-3,100	LIMESTONE and SHALE - a/a.
3,100-3,110	SHALE - gybrn, dkbrn, frm, plty, sl calc, free oil.
3,110-3,120	SHALE and LIMESTONE - a/a.
3,120-3,130	SHALE - crm-buff, lt tan, sft, blky, sl calc, abnt fnt orng flor, no cut.
3,130-3,140	SHALE - a/a, brn tr flor.
3,140-3,150	SHALE - brn, dkbrn, sft-frm, blky, plty, calc, tr orng flor.
3,150-3,160	a/a.
3,160-3,170	SHALE - ltbrn-gybrn, frm, sbfis-fis, plty-splty, mod calc, f strm mlky cut, sl grn flor, tr SANDSTONE.
3,170-3,180	SHALE - ltbrn-ltgy, occ grn brn, f grm-mlky cut.
3,180-3,190	As above, abnt heavy oil, g cut.
3,190-3,200	As above, tr heavy oil, f cut.
3,200-3,210	As above, no oil, tr cut.
3,210-3,220	As above, tr heavy oil, f cut.
3,220-3,230	SHALE - ltgy, occ lt brn, frm, sbfis-fis, plty-blky, n-sl calc, mod heavy oil, g cut, strmg mlky cut, brn stn.
3,230-3,240	As above, mod heavy oil.
3,240-3,250	As above, abnt heay oil.
3,250-3,260	As above, mod heavy oil.
3,260-3,270	SHALE - lt-medgy, occ med brn, frm, sbfis-fis, plty-blky, sl calc, tr oil, f cut.

LITHOLOGY (CONTINUED)

3,270-3,280	As above, g cut.
3,280-3,290	As above, abnt oil, g cut.
3,290-3,300	SHALE - gybrn-ltgy, frm, sbfis-fis, plty, mod calc, tr oil shale, tr heavy oil, f cut mlky strm.
3,300-3,310	SHALE - med brn, frm, sbfis, blky-ireg, mod calc, tr heavy oil, g cut.
3,310-3,320	As above, abnt heavy oil, g cut.
3,320-3,330	SHALE - g medbrn-gybrn, frm, sbfis-fis, blky-plty, sl calc, f cut, mlky strm.
3,330-3,340	As above, tr heavy oil, f cut.
3,340-3,350	SHALE - lt-medbrn, occ gybrn, tr cut.
3,350-3,360	As above.
3,360-3,370	SHALE - ltgy-gybrn, frm, sbfis-fis, plty-blky, sl calc, tr oil, tr SANDSTONE, g strmy mlky cut.
3,370-3,380	As above.
3,380-3,390	SHALE - lttan-ltbrn-ltgy, mod oil, as above, gr mlky cut.
3,390-3,400	As above.
3,400-3,410	As above, abnt oil, oil seen is possum belly.
3,410-3,420	SHALE - grngy-ltgy-ltbrn, abnt oil, oil seen in possum belly, abnt oil in sample.
3,420-3,430	As above, abnt oil in sample.
3,430-3,440	Too muchoil on sample to describe.
3,440-3,450	SHALE - gygrn-ltgy, frm, sbfis-fis, plty-blky, mod calc, tr SANDSTONE, abnt oil, grn strm cut.
3,450-3,460	As above, grn flor, mlky strm cut, abnt oil in sample.
3,460-3,470	As above, grn flor, mlky strm cut, abnt oil in sample.
3,470-3,490	As above.
3,490-3,500	Abnt oil in sample.

LITHOLOGY (CONTINUED)

3,500-3,510	As above.
3,510-3,520	SHALE - gygn, ltgn, ltgy, tan-brn, sft-frm, blky, calc abnt, free oil.
3,520-3,540	SHALE - as above.
3,540-3,500	SHALE - ltgn, gygrn, ltbrn, sft-frm, blky, calc, tr v f gr SANDSTONE.
3,560-3,570	SHALE - as above.
3,570-3,580	SHALE - as above. SANDSTONE (10%) - wh, vf gr, wsrt, sbang, calc cmt, tr flor.
3,580-3,590	SHALE - gy, gygn, frm, plty, calc, abnt frac oil, tr SANDSTONE, as above.
3,590-3,600	SHALE - as above.
3,600-3,610	SHALE - as above, SANDSTONE, wh, clr, vf gr, wsrt, sbang, calc cmt, abnt fnt orng flor, p cut.
3,610-3,620	SHALE - as above.
3,620-3,630	SHALE - gy, gygn, frm, plty, calc.
3,630-3,640	SHALE - as above. LIMESTONE - crm, wh, lt tan, hd, plty, micxln, micrite, n arg, fnt orng flor.
3,640-3,650	LIMESTONE - as above. SHALE - gygn, gn, frm, plty, sl calc.
3,650-3,660	SHALE - as above.
3,660-3,670	SHALE - as above. TR LIMESTONE - as above.
3,670-3,680	SHALE - as above. TR LIMESTONE - as above.
3,680-3,690	SHALE - as above. TR LIMESTONE - as above.
3,690-3,700	SHALE - as above. LIMESTONE - tan, sft, plty, micxln, micrite, p Ø.
3,700-3,710	SHALE and LIMESTONE - as above.
3,710-3,720	SHALE - gn, ltgn, ltgy, frm, plty, sl calc, abnt free oil.

LITHOLOGY (CONTINUED)

3,720-3,730	SHALE - as above. SANDSTONE - wh, vfgr, wsrt, sbang, calc cmt, tr flor.
3,730-3,740	SHALE - gygn, ltbrn, gy, frm, blky, sl calc, abnt free oil.
3,740-3,750	SHALE - as above.
3,750-3,760	As above.
3,760-3,770	As above.
3,770-3,780	SHALE - ltgy, frm, sbfis-fis, plty, sl calc, abnt free oil. 20% SANDSTONE - wh, mod-v fri, fgr, sbang-ang, wsrt calc cmt.
3,780-3,790	SHALE - crm-ltgy, as above, tr SANDSTONE.
3,790-3,800	As above.
3,800-3,810	As above.
3,810-3,820	SHALE - medgy-medbrn, frm, sbfis, blky-plty, sl-mod calc, tr free oil. SANDSTONE - wh, mod fri, fgr, sbang, wsrt grn flor.
3,820-3,830	As above.
3,830-3,840	SHALE - medgy, occ med brn, frm, sbfis-fis, plty-blky, n-sl calc, tr free oil. 10% SANDSTONE - wh-medgy, mod-fri, vfgr, sbang, wsrt calc cmt, mlky cut.
3,840-3,850	As above.
3,850-3,860	SHALE - medgy, frm, sbfis-fis, plty-blky, sl calc, tr free oil, fnt grn-mlky cut.
3,860-3,870	As above.
3,870-3,880	As above, occ medbrn, tr SANDSTONE.
3,880-3,890	As above, fnt grn-mlky cut.
3,890-3,900	SHALE - medgy-dkbrn-medbrn, frm, sbfis, blky-mod calc, tr SANDSTONE, abnt free oil.
3,900-3,910	As above.
3,910-3,920	80% SHALE - as above. 20% SANDSTONE - ltgy, mod fri, f gr wsrt calc cmt, abnt free oil.

LITHOLOGY (CONTINUED)

3,920-3,930	As above.
3,930-3,940	SHALE - as above 60%. SHALE 40% - clr-wh-ltgy, as above, fnt grn flor.
3,940-3,950	As above.
3,950-3,960	SHALE 90% - medgy-dkgrn, frm, sbfis-fis, plty-blky, n calc, abnt free oil. SANDSTONE 10% - wh-lcr, mod fri, vf gr, sbrnd, wsrt grn flor, mlky strm cut.
3,960-3,970	As above.
3,970-3,980	SHALE - lt-medgy, occ medbrn, as above, tr SANDSTONE.
3,980-3,990	As above.
3,990-4,000	SHALE - lt-medgy, occ medbrn, blky-ireg, tr LIMESTONE. 10% SANDSTONE - as above.
4,000-4,010	As above.
4,010-4,020	SHALE - medgy, frm, sbfis-fis, blky-ireg, sl-mod calc. SANDSTONE - wh-clr-ltgy, mod fri, vfgr wsrt calc cmt, mlky strm cut.
4,020-4,030	As above.
4,030-4,040	As above.
4,040-4,050	SHALE - gy, gybrn, frm, blky, plty, sl calc, abnt free oil.
4,050-4,080	SHALE - as above.
4,080-4,090	SHALE - as above.
4,090-4,100	SHALE - as above, tr SANDSTONE.
4,100-4,110	SHALE - gy, gygn, frm, blky, sl calc, tr SANDSTONE.
4,110-4,130	SHALE - gy, ltgy, wh, frm, plty, sl calc, tr intbd SANDSTONE.
4,130-4,150	SHALE - as above.
4,150-4,160	SHALE - as above.
4,160-4,170	SHALE - ltgy, ltgn, frm, plty, sl calc.
4,170-4,180	SHALE - gy, ltgy, frm, plty, sl calc. TR SILTSTONE - wh, ltgy, sdy.

LITHOLOGY (CONTINUED)

4,180-4,190 SHALE - as above.

4,190-4,200 SHALE - ltgy-gy, frm, plty, sl calc.

4,200-4,210 SHALE - as above.

4,210-4,220 SHALE - as above.

4,220-4,230 SHALE - brn-dkbrn, frm, plty, sl calc, tr oil SHALE.

4,230-4,240 SHALE - as above.

** DOUGLAS CREEK 4,240 (+472)

4,238-4,328 SEE CORE #1,2, AND 3 DESCRIPTIONS.

4,350-4,360 SHALE - gygn, frm, blky, sl calc, 40% SANDSTONE, NSFOC.

4,360-4,370 SHALE - gygn, frm-hd, blky, splty, sl calc 45% SANDSTONE, NSFOC.

4,370-4,380 SHALE - gygn, br, frm-hd, blky, sl calc, 40% SANDSTONE, NSFOC.

4,380-4,390 As above.

4,390-4,400 SANDSTONE - wh brn, mod fri, f-med, sbang-rnd, fr srt, calc,40% SHALE, NSFOC.

4,400-4,410 SHALE - gygn, frm, blky, calc, 40% SANDSTONE, strm mlky cut, yel stn.

4,410-4,420 SHALE - gygn, frm-hd, blky, calc, 40% SANDTONE, NSFOC.

4,420-4,430 80% SHALE - medgy-gygrn, frm-hd, sbfis-fis, plty-blky, n-sl calc, NSFOC.
20% SANDSTONE - wh-ltbrn, mod fri, f-med gr, sbang-sbrnd, fsrt calc cmt.

4,430-4,440 60% SHALE.
40% SANDSTONE - as above.

4,440-4,450 60% SANDSTONE - clr-wh, mod fri, f-med gr, sbrnd, fsrt calc cmt, occ calc, xl, NSFOC.
20% SILTSTONE - gybrn-medbrn, frm-hrd, sl-mod calc, sl arg.
20% SHALE - medgy-gygrn, as above.

4,450-4,460 80% SANDSTONE - as above.
20% SILTSTONE.

LITHOLOGY (CONTINUED)

4,460-4,470	80% SANDSTONE - fgr, as above, tr LIMESTONE. 20% SILTSTONE - as above, gybrn-gygrn.
4,470-4,480	20% SANDSTONE - as above. 80% SILTSTONE - medgy-gybrn, frm-hd, mod calc, mod arg.
4,480-4,490	SHALE - lt-med brn, occ medgy, frm, sbfis, blky-ireg, n-sl calc, tr SANDSTONE.
4,490-4,500	80% SHALE - as above. 20% SANDSTONE.
4,500-4,510	SHALE - gybrn, as above.
4,510-4,520	As above.
4,520-4,530	As above.
4,530-4,540	SHALE - brn, gy, gygn, frm, blky, plty, sl calc.
4,540-4,550	SHALE - gygn, brn, frm, blky, sl calc, tr SANDSTONE.
4,550-4,560	SHALE - gygn, brn, frm, blky, plty, calc, 20% SANDSTONE, NSFOC.
4,560-4,570	SHALE - gygn, frm-hd, blky, calc, tr SANDSTONE.
4,570-4,580	SHALE - gygn, frm, blky, splty, sl calc, tr SLT, SANDSTONE.
4,580-4,590	SHALE - gygn, brn, frm, blky, sl calc, tr SHALE.
4,590-4,600	SHALE - brn, gygn, frm, blky, calc, tr SANDSTONE.
4,600-4,610	As above.
4,610-4,620	SHALE - gygn, brn, frm, blky, calc, tr SLT, PYRITE.
4,620-4,630	SHALE - gygn, brn, frm-hd, blky, splty, calc, tr SLT.
4,630-4,640	As above.
4,640-4,650	As above.
4,650-4,660	SHALE - gygn, brn, frm, blky, calc, tr SLT. Shaker down about 12:15 P.M., geolograph depth 4,681.
4,660-4,670	SHALE - gygn, brn, frm, blky, calc, tr SANDSTONE, PYRITE.
4,670-4,680	SHALE - gygn, brn, frm, blky, splty, calc, tr SLT, PYRITE.

LITHOLOGY (CONTINUED)

4,680-4,690	SHALE - gygn, brn, frm, blky, plty, sl calc, tr SLT.
4,700-4,710	SHALE - gygn, brn, frm-hd, blky, calc, tr SANDSTONE, SLT.
4,710-4,720	As above.
4,720-4,730	SHALE - gygn, brn, frm, blky, calc, tr SLT, PYRITE.
4,730-4,740	SHALE - gygn, brn, frm, blky, plty, calc, tr SLT.
4,740-4,750	As above.
4,750-4,760	SHALE - gygn, brn, frm-hd, blky, calc, tr SLT, SANDSTONE.
4,760-4,770	As above.
4,770-4,780	SHALE - gygn, brn, frm-hd, blky, splty, calc, tr SLT.
4,780-4,790	SHALE - blk, gygn, brn, frm, blky, plty, calc, tr SLT.
4,790-4,800	SHALE - gygn, blk, brn, frm, blky, plty, calc, tr SANDSTONE.
4,800-4,810	SHALE - gygn, brn, blk, frm, blky, plty, calc, tr SLT.
4,810-4,820	SHALE - gygn, brn, blk, frm, blky, plty, calc, tr SLT.
4,820-4,830	SHALE - gygn, brn, blk, frm-hd, blky, calc, tr SANDSTONE.
4,830-4,840	SHALE - gygn, brn, frm-hd, blky, plty, calc, tr SANDSTONE.
4,840-4,850	SHALE - gygn, brn, frm, blky, plty, calc, tr SANDSTONE.

** BLACK SHALE FACIES 4,850 (-138)

4,850-4,860	SHALE - brn, gygn, v soft-sft, blky, sl calc, tr SANDSTONE.
4,860-4,870	SHALE - medgy-med-dkbrn, sft, sbfis-fis, blky, occ plty, sl calc, tr SANDSTONE.
4,870-4,880	SHALE - medbrn-redbrn, occ medgy, sft, sbfis, blky-ireg, mod calc.

LITHOLOGY (CONTINUED)

4,880-4,890	SHALE - redbrn, as above.
4,890-4,900	SHALE - dkbrn-redbrn, sft, sbfis, blky-ireg, n-sl calc.
4,900-4,910	SHALE - dkbrn, as above.
4,910-4,920	SHALE - gybrn-dkbrn, as above.
4,920-4,930	As above.
4,930-4,940	SHALE - dkgybrn-blk, sft, sbfis, blky, n-sl calc, tr SANDSTONE.
4,940-4,950	As above.
4,950-4,960	SHALE - medbrn-gybrn, sft, sbfis, blky, n-sl calc.
4,960-4,970	As above.
4,970-4,980	SHALE 80% - blk, sft, frm, sbfis, blky-ireg, n calc. LIMESTONE 20% - medbrn, v sft, mcrxln, micrite, mod arg, n vis Ø.
4,980-4,990	As above.
4,990-5,000	SHALE - dkbrn-blk, sft-frm, sbfis, blky, n-sl calc, tr LIMESTONE.
5,000-5,010	SHALE - gybrn-medbrn, occ blk, sft, sbfis, blky, sl calc, tr SILTSTONE.
5,010-5,020	SHALE 60% - ltgy-gygrn, frm, sbfis-fis, plty-splty, n calc, 40% medbrn, sft, sbfis, blky, sl calc, occ heavy oil.
5,020-5,030	SHALE - gygrn, occ dkbrn, occ blk, frm, sbfis-fis, plty-splty, sl calc, tr SILTSTONE.
5,030-5,040	SHALE - gygrn, occ blk, as above, abnt heavy oil.
5,040-5,050	As above, abnt heavy oil.
5,050-5,060	As above, poor samples.
5,060-5,070	As above, poor samples.
5,070-5,080	SHALE - ltgy-gygrn, occ medbrn, frm, sbfis-fis, plty-blky, sl calc, tr SANDSTONE, abnt heavy oil.
5,080-5,090	SHALE - gygrn, brn, frm, blky-plty, sl calc, tr SANDSTONE.
5,090-5,100	As above.

LITHOLOGY (CONTINUED)

5,100-5,110	SHALE - gygn, brn, frm-hd, blky, plty, calc, tr SANDSTONE.
5,110-5,120	Poor sample (tar - oil).
5,170-5,180	SHALE - gygn, brn, frm, blky, sl calc, tr SANDSTONE.
5,180-5,190	SHALE - gygn, brn, frm-hd, blky, plty, calc, tr SANDSTONE.
5,190-5,200	As above.
5,200-5,210	SHALE - gygn, brn, frm, blky, calc, tr SLT, SANDSTONE.
5,210-5,220	SHALE - brn, gygn, frm, blky, plty,calc, tr SANDSTONE, PYRITE.
5,220-5,230	SHALE - gygn, brn, blk, frm, blky, plty, calc, tr SLT.
5,230-5,240	SHALE - gygn, brn, blk, frm-hd, blky, plty, calc, 5% SANDSTONE, tr PYRITE.
5,240-5,250	SHALE - gygn, brn, blk, frm, blky, plty, calc, tr SANDSTONE, PYRITE.
5,250-5,270	As above.
5,270-5,280	SHALE - gygrn-brn, occ blk, frm, sbfis-fis, blky-plty, sl calc, tr SANDSTONE.
5,280-5,290	As above.
5,290-5,300	60% SHALE - as above. 40% SANDSTONE - clr-wh, mod fri, f-med gr, sbrd, f-srt, calc cmt.
5,300-5,310	No sample.
5,310-5,320	No sample.
5,320-5,330	SHALE - as above, tr LIMESTONE. LIMESTONE - brn, dkbrn, hd, mrcxln, micrite, abnt ool, n-sl arg, NSOFC, p Ø.
5,330-5,340	As above.
5,340-5,350	90% SHALE - medgy, frm, sbfis-fis, blky-plty, n-sl calc. 10% SHALE - medbrn-brngy, hd, mrcxln, micrite, ool, n-sl arg, NSFOC, p Ø.

** GREEN RIVER LIMESTONE 5,365 (-653)

5,350-5,393 SEE CORE #4 DESCRIPTION.

LITHOLOGY (CONTINUED)

5,390-5,400	LIMESTONE 95% - brn, hd, crypt, micrite, sl arg. SHALE 5% - brn, sft-v sft, blky, splty, s calc. TR SANDSTONE.
5,400-5,410	LIMESTONE 95% - brn, frm-hd, crypt, micrite, sl arg, ool. SHALE 5% - brn, sft-v sft, blky, splty, s calc - v calc. TR SANDSTONE, PYRITE.
5,410-5,420	LIMESTONE 95% - brn, frm-hd, crypt, micrite, sl arg. SHALE 5% - gygn, brn, sft-frm, blky, sl calc.
5,420-5,430	As above, ool.
5,430-5,440	LIMESTONE 50% - brn, frm-hd, crypt, micrite, sl arg. SHALE 50%, gngy, frm-hd, blky, plty, sl calc. TR SANDSTONE.
5,440-5,450	SHALE 95% - gngy,brn, frm-hd, blky, plty, sl calc, pl fos. 5% LIMESTONE - as above, fos. TR SANDSTONE.
5,450-5,460	SHALE 90% - brn, gygn, sft-hd, blky, plty, calc. LIMESTONE 10% - brn, frm-hd, crypt, micrite, sl arg.
5,460-5,470	LIMESTONE 60% - brn, frm-hd, crypt, micrite, sl arg. SHALE 40% - brn, gybrn, frm-hd, blky, plty, sl calc.
5,470-5,480	LIMESTONE 70% - brn, frm-hd, crypt, micrite, sl arg, ool. SHALE 30% - brn, gygn, frm-hd, blky-plty, calc. TR PYRITE.
5,480-5,490	LIMESTONE 90% - brn, frm-hd, crypt, micrite, sl arg, ool. SHALE 20% - brn, gygn, frm-hd, blky, plty, calc.
5,490-5,500	As above.
5,500-5,510	SHALE 80% - brn, sft-v sft, blky, plty, calc. SHALE 10% - gygn, brn, frm-hd, blky, plty, sl calc. LIMESTONE 10% - brn, hd, crypt, micrite, sl arg. TR PYRITE.
5,510-5,520	As above, occ blk.
5,520-5,530	SHALE 80% - medgy, occ dkbrn, occ blk, sft-frm, sbfis-fis, blky-splty, sl calc, tr LIMESTONE. SANDSTONE 20% - wh-clr, mod-v fri, med gr, sbang-ang, f srt, calc cmt.
5,530-5,540	SHALE 90% - medgy-gygrn, occ med brn. LIMESTONE 10% - wh-ltgy, frm, mrcxln, micrite, sl arg.

LITHOLOGY (CONTINUED)

5,540-5,550	As above, tr LIMESTONE.
5,550-5,560	As above, tr SANDSTONE, LIMESTONE.
5,560-5,570	As above.
5,570-5,580	SHALE 80% - medgy-gygrn, occ medbrn, sft-frm, sbfis-fis, blky-plty, sl calc, tr SANDSTONE. LIMESTONE 20% - wh-ltgy, hd, micro xln, micrite, sl arg.
5,580-5,590	As above, tr PYRITE, fnt grn flor.
5,590,5,600	As above.
5,600-5,610	SHALE 60% - abnt mica. LIMESTONE 40% - as above. SANDSTONE 20% - clr-wh, mod fri, med gr, sbang-ang, f srt, p Ø, calc cmt.
5,610-5,620	SHALE 50% - medgy-gygn, frm, sbfis-fis, blky-splty, sl-mod calc, tr SANDSTONE, mica. LIMESTONE 50% - medbrn-gybrn, frm, hd, microxln, micrite, sl-mod arg.
** WASATCH	5,625 (-913)
5,620-5,630	SHALE 90% - medgy-gygn, frm-hd, blky-splty,sl-mod calc. LIMESTONE 10% - brn, frm-hd, crytoxln, micrite, sl arg. TR SANDSTONE.
5,630-5,640	SHALE 50% - med gy-gygn, frm, hd, blky-splty, sl calc. SHALE 50% - brn, frm-hd, blky-splty, sl calc, plcy fos. TR LIMESTONE, SANDSTONE, mica.
5,640-5,650	As above, no mica or plcy fos.
5,650-5,660	SHALE - gy-gn brn, frm-hd, blky, splty, sl calc. TR SANDSTONE, PYRITE.
5,660-5,670	SHALE 70% - gygn, frm-hd, blky, plty, sl calc. SHALE 30% - red brn, sft-frm, blky, plty, sl calc. TR SANDSTONE, SLT, LIMESTONE.
5,670-5,680	SHALE 80% - gygn, frm-hd, blky, plty, sl calc. SHALE 20% - redbrn, sft-frm, blky, plty, sl calc. TR SANDSTONE - brn, ool, LIMESTONE.
5,680-5,690	SHALE 90% - as above. SHALE 10% - as above. TR SANDSTONE, LIMESTONE.

LITHOLOGY (CONTINUED)

5,690-5,700	SHALE - gygn, brn, frm-hd, blky, plty, sl calc. TR SANDSTONE, LIMESTONE, PYRITE.
5,700-5,710	SHALE - as above. Tr redbrn, SHALE, SANDSTONE, LIMESTONE, PYRITE.
5,710-5,720	As above. Tr ool, brn, LIMESTONE.
5,720-5,730	SHALE 90% - gygn, brn, frm-hd, blky, plty, sl calc. SHALE 10% - redbrn, sft, blky, plty, calc, fos.
5,730-5,740	As above. TR LIMESTONE, SANDSTONE.
5,740-5,750	SHALE 80% - as above. SHALE 20% - redbrn, sft, blky, plty. TR LIMESTONE, SANDSTONE, calc.
5,750-5,760	As above. Tr red-bn LIMESTONE.
5,760-5,770	SHALE 80% - gygn, frm-hd, blky, plty, sl calc. SHALE 10% - redbrn, sft-frm, blky, plty, calc. LIMESTONE 10% - red-brn, frm-hd, micro-crpto, xln, micrite, sl arg, ool. TR SANDSTONE.
5,770-5,780	SHALE - gygnbrn, frm-hd, blky, plty, sl calc. TR SHALE - dkbrn, hd, blky, n calc. Tr brn-red LIMESTONE. TR SANDSTONE. TR PYRITE. TR SHALE - red, sft, blky, calc.
5,780-5,790	SHALE 85% - gygn, brn, frm-hd, blky, plty, sl calc. SHALE 15% - red-brn, frm, plty, calc. TR LIMESTONE, SANDSTONE, PYRITE.
5,790-5,800	As above. But no PYRITE.
5,800-5,810	As above.
5,810-5,820	SHALE 70% - gygn, brn, frm-hd, blky, plty, sl calc. SHALE 30% - red-brn, frm, plty. TR LIMESTONE, SANDSTONE, calc.
5,820-5,830	As above. TR PYRITE.
5,830-5,840	SHALE 60% - gygn, brn, frm-hd, blky, plty, sl calc. SHALE 30% - red-brn, frm, plty, calc. SANDSTONE 10% - wht-brn, fri, vf-fgr, sbang-rnd, fr srt, calc cmt. TR LIMESTONE, SLT.

LITHOLOGY (CONTINUED)

5,840-5,850	SHALE 50% - brn, sft-frm, blky, plty, calc. SHALE 50% - gygn, frm-hd, blky, plty, sl calc. TR LIMESTONE, SANDSTONE.
5,850-5,860	As above, sl yel flor.
5,860-5,870	As above.
5,870-5,880	As above, occ free oil.
5,880-5,890	As above.
5,890-5,900	SHALE 60% - medgy, frm, sbfis-fis, plty-blky, mod calc. SHALE 40% - medbrn-redbrn, frm, sbfis, blky, mod-v calc, occ free oil, tr LIMESTONE, SANDSTONE.
5,900-5,910	SHALE 50/50%, as above.
5,910-5,920	As above, 10% LIMESTONE - med brn, sft-frm, micro xln, micrite, mod arg, n vis p Ø.
5,920-5,930	SHALE 60% - med-dkby, frm, fis, blky, plty, n-sl calc, tr LIMESTONE, SANDSTONE. SHALE 40% - red brn, frm, sbfis-fis, blky-plty, mod-v calc, occ free oil.
5,920-5,970	SHALE 50/50%, as above.
5,970-5,980	SHALE 60% - red. SHALE 40% - gy.
5,980-5,990	SHALE - as above, fnt, yel flor.
5,990-6,000	SHALE 60% - red. SHALE 40% - gy, as above.
6,000-6,010	SHALE 50% - red brn, frm, sbfis-fis, blky-plty, sl calc - calc. SHALE 50% - gy-gn, frm, fis, blky-plty, n-sl calc. TR LIMESTONE, SANDSTONE.
6,010-6,020	SHALE 60% - gygn, as above. SHALE 40% - red brn, as above. TR LIMESTONE, SANDSTONE.
6,020-6,040	As above.
6,040-6,050	As above, tr red SILTSTONE, PYRITE.
6,050-6,060	As above, no PYRITE.
6,060-6,070	SHALE 50% - gngy, as above. SHALE 50% - redbrn, as above, occ free oil.

LITHOLOGY (CONTINUED)

6,070-6,080	SHALE 60% - gygn, frm-hd, fis, blky-plty-splty, sl calc - calc. SHALE 40% - red-brn, sft-frm, fis, blky-plty, n - sl calc. TR SHALE - brn-dkbrn, frm, fis, blky-plty, n calc, lam. TR SANDSTONE, LIMESTONE.
6,080-6,090	As above, tr PYRITE.
6,090-6,100	SHALE 60% - gygn, frm-hd, fis, blky-plty, sl calc-calc. SHALE 40% - red-brn, sft-frm, fis, blky-plty, n-sl calc. TR SANDSTONE, LIMESTONE, PYRITE.
6,100-6,110	SHALE 40% - gygn, as above. SHALE 60% - redbrn, as above. Tr red-brn, SILTSTONE, SANDSTONE LIMESTONE, PYRITE.
6,110-6,120	As above.
6,120-6,130	SHALE 50% - gygn, as above. SHALE 50% - red brn, as above. Tr red-brn, SILSTONE, SANDSTONE, LIMESTONE.
6,130-6,140	SHALE 60% - red brn, sft-frm, fis, blky-plty, n-sl calc. SHALE 30% - gygn, frm-hd, fis, blky - plty, sl calc - calc. SILTSTONE 10% - red brn, sft, v calc, arg.
6,140-6,150	SHALE - 60% red SHALE. 40% green SHALE. TR SILTSTONE, SANDSTONE.
6,150-6,160	As above. TR PYRITE.
6,160-6,170	SHALE 50% red, as above. SHALE 50% green.
6,170-6,180	SHALE 60% red. SHALE 40% green , as above.
6,180-6,200	As above.
6,200-6,210	As above, tr PYRITE, SANDSTONE.
6,210-6,220	SHALE 50% red. SHALE 50% green, as above.
6,220-6,230	As above.

LITHOLOGY (CONTINUED)

6,230-6,250	As above.
6,250-6,260	SHALE 60% - red brn, sft-frm, sbfis-fis, blky-plty, mod-v calc, tr SANDSTONE, LIMESTONE, mica. SHALE 40% - medgy-gygrn, frm, fis, plty-splty, sl calc.
6,260-6,300	As above.
6,300-6,310	SHALE 60% - gygrn, SHALE 40% - red, as above.
6,310-6,340	As above.
6,340-6,350	SHALE 60% - redbrn, sft-frm, sbfis-fis, blky-plty, mod - v calc. SHALE 40% - gygrn-medgy, frm, fis, plty-blky, sl calc, tr LIMESTONE , mica, occ free oil.
6,350-6,390	As above.
6,390-6,400	SHALE 70% - redbrn, 30% gygrn.
6,400-6,410	SHALE - as above.
6,410-6,420	SHALE - as above, tr PYRITE.
6,420-6,440	As above, no PYRITE.
6,440-6,450	SHALE - red, 60% as above. SHALE-green, 40% as above. TR PYRITE.
6,450-6,460	As above.
6,460-6,470	As above, tr LIMESTONE, PYRITE.
6,470-6,480	SHALE 70% - red brn, sft-frm, sbfis-fis, blky-plty, mod - v calc. SHALE 30% - gngy, frm, fis, plty-blky-splty, sl calc. TR SANDSTONE, PYRITE.
6,480-6,490	SHALE 60% - red, as above. SHALE 40% - gn , as above. TR SANDSTONE, PYRITE.
6,490-6,500	As above.
6,500-6,510	As above. No PYRITE.
6,510-6,520	As above.
6,520-6,530	As above. TR SANDSTONE, LIMESTONE.

LITHOLOGY (CONTINUED)

6,530-6,550	As above.
6,550-6,590	No sample, shaker down.
6,590-6,600	As above. TR SANDSTONE.
6,600-6,610	SHALE - as above. 20% SANDSTONE - wh, fri, frm, gn, sbrnd-rnd, fr-w std.
6,610-6,620	60% red SHALE, as above. 40% green SHALE, as above. TR SANDSTONE.
6,620-6,640	As above.
6,640-6,650	No sample.
6,650-6,660	50% SHALE - gygrn-medgy, occ dkgy, frm, fis, splty-plty, occ plky, mod- v calc. 50% SHALE - redbrn, sft-frm, sbfis-fis, blky- plty, n-sl calc, tr LIMESTONE, SANDSTONE.
6,660-6,670	SHALE 60% - red , 40% gy, tr SANDSTONE. 20% LIMESTONE - wh-ltgy, frm, microxln, micrite, n-mod arg, n vis Ø, NSFOC. 90% LIMESTONE - as above, tr LIMESTONE.
6,670-6,680	10% SANDSTONE - clr, mod fri, med gr, sbang-ang, fr srt, p Ø, calc cmt.
6,680-6,690	SHALE - as above, tr SANDSTONE, LIMESTONE.
6,690-6,720	SHALE 50-50% as above.
6,720-6,730	As above, 10% SANDSTONE - clr-wh-ltgy, mod fri, med gr, sbang, frsrt, calc cmt. 10% LIMESTONE - ltgy, frm, microxln, micrite, n-mod arg, n vis Ø.
6,730-6,740	SHALE 50 - 50%.
6,740-6,760	As above.
6,760-6,770	SHALE 70% - red brn, sft-frm, sbfis-fis, blky-plty, m-v calc. SHALE 30% - gygn, frm, fis, blky-plty, s calc, tr SANDSTONE, PYRITE.
6,770-6,780	SHALE - red 70%. SHALE - green 20%. LIMESTONE 10% - wht-gy, frm, microxln, micrite, n-sl arg, no vis Ø.

LITHOLOGY (CONTINUED)

6,780-6,790	SHALE - red 50%. SHALE - brn 50%. TR LIMESTONE.
6,790-6,800	As above.
6,800-6,810	As above. TR SANDSTONE.
6,810-6,820	As above.
6,820-6,830	SHALE - red 70%. SHALE - gn 30%. TR SHALE - lam, brn, SANDSTONE.
6,830-6,840	SHALE - red 80% SHALE - gn 20%.
6,840-6,850	SHALE - red 50%. SHALE - green 50%. TR LIMESTONE, SANDSTONE.
6,850-6,860	SHALE - red 45%. SHALE - grn 45%. SANDSTONE 10% - wht, fri, f-med grn, sbrnd-rnd, fr-w srt.
6,860-6,870	SANDSTONE - wh-clr, f-mgr, wsrt, sbang-sbrd, calc cmt, NSOFC.
6,870-6,880	SANDSTONE - as above, SHALE - rdbrn, gygn, frm, blky, calc, Tr LIMESTONE.
6,880-6,890	SHALE - as above.
6,890-6,900	SHALE - rdbrn, gygn, frm, blky, calc, tr PYRITE.
6,900-6,960	SHALE - as above.
6,960-6,970	SHALE - as above, SANDSTONE - clr-wh, fr-m gr, f-w srt, sbang-sbrd, calc cmt, NSOFC.
6,970-6,980	SANDSTONE - as above.
6,980-6,990	SANDSTONE - as above, SHALE - as above.
6,990-7,000	SHALE - rd brn, gygn, frm, blky-plty, sl calc, occ slty, tr PYRITE.
7,000-7,010	SHALE - as above.
7,010-7,020	SHALE - as above, tr SANDSTONE.
7,020-7,030	SHALE - as above.

LITHOLOGY (CONTINUED)

7,030-7,040	SHALE - as above, SANDSTONE - clr-wh, s and p, f gr, f srt, fri, sbang-sbrd, calc cmt, NSOFC.
7,040-7,050	SHALE, SANDSTONE - as above.
7,050-7,060	SHALE - rdbrn, gygn, frm, blky-plty, sl calc, tr PYRITE.
7,060-7,090	SHALE - as above.
7,090-7,100	SHALE - rdbrn, gygn, frm, blky-plty, sl calc, tr PYRITE, tr LIMESTONE.
7,100-7,190	SHALE - as above.
7,190-7,200	SHALE - gygn, rdbrn, frm, blky-plty, calc.
7,200-7,290	SHALE - as above.
7,290-7,300	SHALE - gygn, rdbrn, frm, blky-plty, calc, tr SANDSTONE, LIMESTONE.
7,300-7,340	SHALE - as above.
7,340-7,350	SHALE - rdbrn, gygn, frm, blky-plty, calc.
7,350-7,390	SHALE - as above.
7,390-7,400	SHALE - rd brn, gygn, frm, blky-plty, calc, tr SANDSTONE.
7,400-7,410	SHALE - as above.
7,410-7,420	SHALE - as above, wh-clr, s and p, f gr, m-wsrt, fri, sbrd, calc cmt, NSOFC.
7,420-7,430	SHALE and SANDSTONE - as above.
7,430-7,440	SANDSTONE - wh-clr, s and p, f gr, m-wsrt, calc cmt, sbang-sbrd, NSOFC.
7,440-7,450	SANDSTONE and SHALE - as above.
7,450-7,460	SANDSTONE - as above.
7,460-7,470	SANDSTONE - wh-clr, s and p, f gr, m-wsrt, sbang-sbrd, calc cmt, NSOFC.

CORE #1: Douglas Creek Member of Green River Formation (4,238'-4,242')

Cut: 4' - Recovery: 4'

4,238-4,239	SHALE - gygrn, hd, fis, calc cmt, poss vert frac, free oil on surf frac, conch frac lam thin lens bdg, some sl slty, 0 - 5% Ø,occ pyr, sp oil occ bleeding oil when extracted from barrel.
4,239-4,240	SHALE - grngy, hd, fis, calc cmt, poss vert frac, free oil on surf frac, conch frac, lam thn lens, sl less slty, 0 - 5% Ø, occ pyr, sp oil occ bleeding oil when extracted from barrel.
4,240-4,241	SHALE - gygrn, hd, fis, calc cmt, poss vert frac, free oil on surf frac, conch frac, lam thn lens bdg, sl slty, 0 - 5% Ø, occ pyr, sp oil occ bleeding oil when extracted from barrel.
4,241-4,242	No Recovered.

CORE #2: Douglas Creek Member (4,242' - 4,302')

Cut: 60' - Recovery: 58'

4,242-4,243	SHALE - medgy, hd, fis, plty, mod calc, tr pyr, fos tracks, carb in places, sl dull yel cut and flor.
4,243-4,244	SHALE - medgy, hd, fis, plty, calc cmt, tr pyr, no flor, sl dull yel cut, no stn.
4,244-4,245	SHALE - medgy, hd, fis, plty, calc cmt, tr pyr, musc and phlog clasts, NSFOC.
4,245-4,246	SHALE - medgy, hd, fis, plty, calc cmt, s tr phlog clasts, sl yel flor, p-mod cut, dull yel stn.
4,246-4,247	SHALE - medgy, hd, fis, plty, calc cmt, s tr phlog clasts, NSFOC.
4,247-4,248	SHALE - medgy, hd, fis, plty, calc cmt, vis lam, low amp dep, no flor, sl yel cut, n stn.
4,248-4,249	SHALE - medgy-gygrn, fis, hd, plty, calc cmt, tr pyr musc, NSFOC.
4,249-4,250	SHALE - medgy-gygrn, hd, fis, plty, calc cmt, NSFOC.
4,250-4,251	SHALE - medgy-gygrn, hd, fis, plty, calc cmt, NSFOC.
4,251-4,252	SHALE - medgy-gygrn, hd, fis, plty, calc cmt, tr phlog clasts, NSFOC.
4,252-4,253	SHALE - medgy-gygrn, hd, fis, plty, calc cmt, vis bdg planes, tr PYRITE, NSFOC.
4,253-4,254	SHALE - medgy-gygrn, hd, fis, plty, calc cmt, vis bdg planes, NSFOC.
4,254-4,255	SHALE - medgy-gygrn, hd, fis, plty, calc cmt, vis bdg planes, NSFOC.
4,255-4,256	SHALE - medgy-gygrn, hd, fis, plty, calc cmt, tr musc phlog, NSFOC.
4,256-4,257	SHALE - medgy-gygrn, hd, fis, plty, calc cmt, tr musc and phlog, NSFOC.
4,257-4,258	SHALE - medgy-gygrn, hd, fis, plty, calc cmt, sl carb along frac, NSFOC.
4,258-4,259	SHALE - medgy-gygrn, hd, fis, plty, calc cmt, sml lam fl channels, sl frac infill, NSFOC.
4,259-4,260	SHALE - med-dkgy, hd, fis, plty, calc cmt, NSFOC.

CORE #2 (CONTINUED)

4,280-4,281	SHALE - medgy-gygrn, frm-hd, fis, plty, NSFOC.
4,281-4,282	SHALE - medgy-gygrn, frm-hd, fis, plty, NSFOC.
4,282-4,283	SANDSTONE - gywh, vf-f gr, sbang-sbrnd, p-fr srt, calc cmt, v tt, p Ø, NSFOC.
4,283-4,284	SANDSTONE - gywh, vf-f gr, sbang-sbrnd, p-fr srt, calc cmt, v tt, p Ø, NSFOC.
4,284-4,285	SHALE - medgy-gywh, v hd, fis, plty, slty-sndy, NSFOC.
4,285-4,286	SHALE - medgy-gywh, v hd, fis, plty-sdy, NSFOC.
4,286-4,287	SHALE - dk-medgy, hd, fis, plty-splty, calc cmt, NSFOC.
4,287-4,288	SHALE - dk-medgy, hd, fis, plty-splty, calc cmt, vis lam bdg, NSFOC.
4,288-4,289	SHALE - dk-medgy, hd, fis, plty-splty, calc cmt, vis lam bdg, NSFOC.
4,289-4,290	SHALE - dk-medgy, hd, fis, plty-splty, calc cmt, vis lam bdg, NSFOC.
4,290-4,291	SANDSTONE - wh-whgy, vf-f gr, sbang, p-fr srt, 5% Ø, occ slty, NSFOC.
4,291-4,292	SANDSTONE - wh-whgy, vf-f gr, sbang, p-fr srt, 5% Ø, occ slty, NSFOC.
4,292-4,293	SANDSTONE - wh-whgy, vf-f gr, sbang-ang, p-fr srt, occ musc, 5% Ø, occ slty, NSFOC.
4,293-4,294	SANDSTONE - wh-whgy, vf gr, sbang, fr srt, calc cmt, v p Ø 1 - 2%, v tt, NSFOC.
4,294-4,295	SANDSTONE - wh-whgy, vf gr, sbang-ang, fr srt, calc cmt, v p Ø 1 - 2%, v tt, NSFOC.
4,295-4,296	SANDSTONE - gywh, vf gr, sbang-sbrnd, fr srt, calc cmt, yel flor, sl yel mlky cut.
4,296-4,297	SANDSTONE - gywh, vf gr, sbang-sbrnd, fr srt, calc cmt, intbd SHALE, yel flor, sl yel mlky cut.
4,297-4,298	SANDSTONE - gywh, vf gr grdg to f gr @ 4,298', sbang-sbrnd, fr srt, calc cmt, yel flor, sl yel mlky cut.
4,298-4,299	SANDSTONE - gywh-wh, vfgr, sbang, p-fr srt, calc cmt, sl pet oil, NSFOC.

CORE #2 (CONTINUED)

4,260-4,261	SANDSTONE - dkgy-gyamb, vf-c gr, ang-rnd, p srt, p Ø, sl mlky cut, n flor, n stn.
4,261-4,262	SANDSTONE - dkgy-gyamb, vf-f gr, ang-rnd, p srt, p Ø, yel flor, f mlky cut.
4,262-4,263	SHALE - medgy, hd, fis, plty, calc cmt, tr PYRITE sml redbrn SHALE intcl, NSFOC.
4,263-4,264	SHALE - medgy, hd, fis, plty, calc cmt, tr PYRITE, sml redbrn SHALE intcl, NSFOC.
4,264-4,265	SHALE - medgy-gygrn, hd, fis, plty, calc cmt, tr PYRITE, tr musc, NSFOC.
4,265-4,266	LIMESTONE - gywh, v hd, mic xln, micrite, p Ø, NSFOC.
4,266-4,267	SANDSTONE - wh-gywh, f gr, sbang-sbrnd, p-mod srt, calc cmt, fos, carb, NSFOC.
4,267-4,268	LIMESTONE - gywh-medgy, v hd, mic xln, micrite, sdy, lam SHALE flows, v p Ø slty.
4,268-4,269	SHALE - medgy-gygrn, hd, fis, blky, v calc, p Ø, lmy, NSFOC.
4,269-4,270	SHALE - med-dkgy, v hd, fis, plty, sl calc, v p Ø, NSFOC.
4,270-4,271	SHALE - med-dkgy, v hd, fis, plty, sl calc, v p Ø, NSFOC.
4,271-4,272	SHALE - medgy-gygrn, v hd, vis, plty, calc cmt, calc filled frac, tr carb frag, NSFOC.
4,272-4,273	SHALE - medgy-gygrn, hd, fis, plty, tr musc, NSFOC.
4,273-4,274	SHALE - medgy-gygrn, hd, fis, plty, tr musc, NSFOC.
4,274-4,275	SHALE - medgy-gygrn, hd, fis, plty, tr musc, sme musc fl pat, sl slty, NSFOC.
4,275-4,276	SHALE - medgy-gygrn, v hd, fis, plty, calc cmt.
4,276-4,277	SHALE - medgy-gygrn, v hd, fis, plty, calc cmt.
4,277-4,278	SANDSTONE - whgy-wh, vf-f gr, sbang, p srt, mod calc, tt, v p Ø, tr musc, NSFOC.
4,278-4,279	SANDSTONE - whgy-wh, vf-f gr, sbang, calc cmt, fr srt, v sl flor, p cut, n stn, v tt, p Ø.
4,279-4,280	SHALE - medgy-gygrn, frm-hd, fis, plty, NSFOC.

CORE #2 (CONTINUED)

4,299-4,300	SANDSTONE - dkgy-wh, vf gr, sbang-sbrnd, p-fr srt, calc cmt, vis oil, dull orng-yel flor, strmg yel-mlky cut, yel-orng stn, 5 - 10% Ø.
4,300-4,301	Not Recovered.
4,301-4,302	Not Recovered.

NOTE: Fracturing between 4,265' and 4,267', fracturing from 4,278½' to 4,279½', fracturing from 4,292' - 4,296'.

CORE #3: (4,302' - 4,328')

Cut: 26' - Recovery: 26'

4,302-4,303	SANDSTONE - wh, vf-f gr, sbang-sbrnd, fr srt, calc cmt, vis oil stn, yel flor, mod mlky cut, fnt yel-grn-orng stn, mod Ø.
4,303-4,304	SANDSTONE - wh-clr, vf-m gr, sbang-sbrnd, calc cmt, vis oil, sl yel flor, strm yel cut, fnt yel orng stn.
4,304-4,305	SANDSTONE - wh-clr, vf-med gr, sbang-sbrnd, calc cmt, vis oil, sl yel flor, strm yel cut, fnt yel orng stn.
4,305-4,306	SHALE - medgy-gygrn, hd, fis, plty, calc cmt, tr musc, NSFOC.
4,306-4,307	SANDSTONE - wh-clr, vf-f gr, sbang, fr srt, calc cmt, occ musc, occ intbd SHALE, v p Ø.
4,307-4,308	SANDSTONE - wh-clr, vf-f gr, sbang, fr srt, calc cmt, occ musc, occ intbd SHALE, v p Ø.
4,308-4,309	SHALE - medgy-gygrn, hd, fis, slty, conch frac, occ pyr, cln, NSFOC.
4,309-4,310	SHALE - medgy-gygrn, hd, fis, plty, conch frac, occ pyr, cln, NSFOC.
4,310-4,311	SILTSTONE - gybrn-medgy, hd-vhd, calc cmt, arg, occ biot and musc, sl flor, n cut, n stn.
4,311-4,312	SHALE - medgy-gygrn, hd, fis, plty, calc cmt, var calcite, NSFOC.
4,312-4,313	SHALE - medgy-gygrn, hd, fis, plty, calc cmt, var calc, NSFOC.
4,313-4,314	SHALE - medgy-gygrn, hd, fis, plty, calc cmt, var calc, NSFOC.
4,314-4,315	SHALE - medgy-gygrn, hd, fis, plty, calc cmt, var calc, NSFOC.
4,315-4,316	SHALE - medgy-gygrn, hd, fis, plty, calc cmt, var calc, NSFOC.
4,316-4,317	SHALE - medgy-gygrn, hd, fis, plty, calc cmt, var calc, occ intbd vf gr SANDSTONE, NSFOC.
4,317-4,318	SHALE - medgy-gygrn, hd, fis, plty, calc cmt, var calc, occ intbd vf gr SANDSTONE, NSFOC.
4,318-4,319	SHALE - medgy-gygrn, hd, fis, plty, calc cmt, var calc, occ intbd vf gr SANDSTONE, NSFOC.

CORE #3 (CONTINUED)

4,319-4,320	SHALE - medgy-gygrn, hd, fis, plty, calc cmt, occ pyr, NSFOC.
4,320-4,321	SHALE - medgy-gygrn, hd, fis, plty, calc cmt, occ pyr, NSFOC.
4,321-4,322	SHALE - medgy-gygrn, hd, fis, plty, calc cmt, occ pyr, NSFOC.
4,322-4,323	SHALE - medgy-gygrn, hd, fis, plty, calc cmt, occ pyr, NSFOC.
4,323-4,324	SHALE - medgy-gygrn, hd, fis, plty, calc cmt, occ musc, NSFOC.
4,324-4,325	SHALE - medgy-gygrn, hd, fis, plty, calc cmt, occ musc, NSFOC.
4,325-4,326	SHALE - medgy-gygrn, hd, fis, plty, calc cmt, occ musc, NSFOC.
4,326-4,327	SHALE - medgy-gygrn, hd, fis, plty, calc cmt, occ musc, NSFOC.
4,327-4,328	SHALE - medgy-gygrn, hd, fis, plty, calc cmt, occ musc, NSFOC.

CORE #4: Green River Limestone (5,350' - 5,393')

Cut: 45' - Recovery: 43'

5,350-5,351	SHALE - gygrn, frm, blky-plty, sbfis-fis, conch frac, sl calc.
5,351-5,352	SHALE - gygrn, frm, sbfis-fis, blky, conch frac, sl calc, sl slty.
5,352-5,353	SHALE - gygrn, frm, sbfis-fis, blky, sl calc, conch frac, sl slty.
5,353-5,354	SHALE - dkgygrn, frm, sbfis-fis, blky-plty, sl-calc, conch frac.
5,354-5,355	SHALE - dkgygrn, frm, sbfis-fis, blky-plty, sl calc, conch frac, tr fos frag.
5,355-5,356	SHALE - dkgygrn, frm, sbfis-fis, blky-plty, sl calc, conch frac, tr fos frag.
5,356-5,357	SANDSTONE - med-ltbrn, vf gr, mod fri, fr srt, sbang, pet od, bri grn flor, mod mlky cut, grn stn, gas bubbles, p - f Ø, less than 10%.
5,357-5,358	SANDSTONE - mod-ltbrn, vf gr, mod fri, fr srt, sbang, pet od, bri grn flor, mod mlky cut, grn stn, gas bubbles, p-f Ø, less than 10%.
5,358-5,359	SANDSTONE - med-ltbrn, vf gr, mod fri, fr srt, sbang, pet od, bri grn flor, mod mlky cut, grn stn, gas bubbles, p-f Ø, less than 10%.
5,359-5,360	SILTSTONE - dkgygrn, frm-hrd, blky, mod calc conch frac.
5,360-5,361	SHALE - gygrn, frm, sbfis-fis, blky, sl calc, conch frac.
5,361-5,362	SHALE - gygrn, frm, sbfis-fis, blky, sl calc, conch frac.
5,362-5,363	Not Recovered.
5,363-5,364	Not Recovered.
5,364-5,365	SHALE - dkgygrn, frm, sbfis-fis, blky, sl calc, conch frac.
5,365-5,366	SHALE - dkgy, frm, sbfis-fis, blky, sl calc, conch frac.
5,366-5,367	SHALE - dkgygrn, hd, sbfis-fis, blky-plty, sl calc, conch frac, tr PYRITE, tr fos leaves.

CORE #4 (CONTINUED)

5,367-5,368	SHALE - dkbrn-blk, hd, sbfis-fis, blky, v calc, conch frac, occ lam.
5,368-5,369	SHALE - dkbrn-blk, hd, sbfis-fis, blky, v calc, conch frac, lam, limey.
5,369-5,370	LIMESTONE - dkbrn, v hd, mic xln, micrite , mod arg, rthy, v shaley, v p Ø.
5,370-5,371	LIMESTONE - dkbrn, v hd, micxln, micrite, mod arg, rthy, v shaley, v p Ø.
5,371-5,372	LIMESTONE - dkbrn, v hd, micxln, micrite, mod arg, rthy, v shaley, v p Ø.
5,372-5,373	LIMESTONE - dkbrn, v hd, micxln, micrite, mod arg, v shaley, v p Ø.
5,373-5,374	LIMESTONE - dkbrn, v hd, micxln, micrite, mod arg, v shaley, v p Ø.
5,374-5,375	LIMESTONE - dkbrn-blk, v hd, micxln, micrite, mod arg, tr ool.
5,375-5,376	LIMESTONE - dkbrn-blk, v hd, micxln, micrite, mod arg, tr ool.
5,376-5,377	LIMESTONE - medbrn, v hd, micxln, micrite, mod arg, tr ool.
5,377-5,378	LIMESTONE - medbrn, v hd, micxln, micrite, mod arg, tr ool.
5,378-5,379	LIMESTONE - medbrn, v hd, micxln, micrite, mod arg, tr ool, NSFOC.
5,379-5,380	LIMESTONE - dkbrn, v hd, micxln, micrite, plty, v p Ø.
5,380-5,381	LIMESTONE - dkbrn, v hd, micxln, micrite, plty, tr fos, v p Ø.
5,381-5,382	LIMESTONE - dkbrn-blk, v hd, micxln, micrite, mod arg, v p Ø, NSFOC.
5,382-5,383	LIMESTONE - dkbrn-blk, v hd, micxln, micrite, mod arg, v p Ø, NSFOC.
5,383-5,384	LIMESTONE - dkbrn-blk, v hd, micxln, micrite, mod arg, v p Ø, NSFOC.
5,384-5,385	SHALE - dkbrn-blk, hd, sbfis-fis, blky, sl calc.

CORE #4 (CONTINUED)

5,385-5,386	SHALE - dkbrn, hd, sbfis-fis, blky, n-sl calc, conch frac.
5,386-5,387	Not Recovered.
5,387-5,388	Not Recovered.
5,388-5,389	Not Recovered.
5,389-5,390	Not Recovered.
5,390-5,391	Not Recovered.
5,391-5,392	Not Recovered.
5,392-5,393	Not Recovered.

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STATE OF UTAH

OIL & GAS CONSERVATION COMMISSION

SUBMIT IN TRIPLICATE*
(Other instructions on reverse side)

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

5. LEASE DESIGNATION AND SERIAL NO.: ML-35713

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

7. UNIT AGREEMENT NAME:

1. OIL WELL [XX] GAS WELL [ ] OTHER

2. NAME OF OPERATOR: Natural Gas Corporation of California

8. FARM OR LEASE NAME: Pleasant Valley

3. ADDRESS OF OPERATOR: 85 South 200 East, Vernal, UT 84078 Telephone 801-789-4573

9. WELL NO.: 13-16 State

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface

800' FWL, 2122' FSL, Section 16, T.9S., R.19E. - NW¼ SW¼

10. FIELD AND POOL, OR WILDCAT: Wildcat

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Sec. 16, T.9S., R.19E.

14. PERMIT NO.: 43-047-31128

15. ELEVATIONS (Show whether DF, RT, GR, etc.): 4705' GR

12. COUNTY OR PARISH: Uintah

13. STATE: Utah

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF		PULL OR ALTER CASING		WATER SHUT-OFF		REPAIRING WELL	
FRACTURE TREAT	X	MULTIPLE COMPLETE	X	FRACTURE TREATMENT		ALTERING CASING	
SHOOT OR ACIDIZE	X	ABANDON*		SHOOTING OR ACIDIZING		ABANDONMENT*	
REPAIR WELL		CHANGE PLANS		(Other)			
(Other)				(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)			

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

Operator proposes to sequentially perforate, acidize and fracture treat the following zones:

4351-56	4790-92	4867-70	4968-70
4484-96	4816-18	4884-88	4978-80
4584-96	4836-38	4916-20	4984-86
4764-67	4851-58	4932-34	5000-05
			5076-80

Fracture treating will be performed with gelled diesel. Please see attached location layout.

APPROVED BY THE STATE OF UTAH DIVISION OF OIL, GAS, AND MINING
DATE: 3/22/82
BY: [illegible]

18. I hereby certify that the foregoing is true and correct

SIGNED: Wm Ryan William A. Ryan TITLE: Petroleum Engineer DATE: 3/9/82

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

cc: Div. OG&M; Minerals Management; DeGolyer; Operations; ERHenry; S. Furtado

*See Instructions on Reverse Side

OPERATOR NATURAL GAS CORP. OF CALIF **SEC** 16 **TWP** T9S **RNG** R19E

WELL 43-16 PLEASANT VALLEY' UINTAH **CO.,** UTAH

analex
A GEOSCIENCE EXTENSION OF XCO

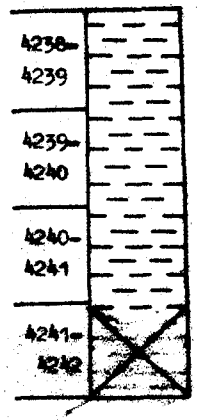
BEST COPY AVAILABLE

CORE REPORT: Core# 1 Interval 4238-4242

Core Bit and Tool Description Bit No. 81B0521 Size: 7 7/8 Type: MC-20

Footage Attempted 4238-4275 Footage Drilled 4238-4242 Recovery (%) 90%

CORE DESCRIPTION: GREEN SHALE FACIES OF THE GREEN RIVER FORMATION; GARDEN GULCH (MOD. SAMPLE COND.)



SH gygrn, hd, fis, calc cmt, poss vert frac, free oil on surf frac, conch frac lam thin lens bdg, some sl slty, 0-5% ∅ occ pyr, sp oil occ bleeding oil when extracted from barrel

SH gygrn, hd, fis, calc cmt, poss vert frac, free oil on surf frac, conch frac, lam thn lens, sl less slty, 0-5% ∅, occ pyr, sp oil occ bleeding oil when extracted from barrel

SH gygrn, hd, fis, calc cmt, poss vert frac, free oil on surf frac, conch frac, lam thn lens bdg, sl slty, 0-5% ∅, occ pyr, sp oil occ bleeding oil when extracted from barrel

NOT RECOVERED

OPERATOR NATURAL GAS CORP. OF CALIF. **SEC** 16 **TWP** 29S **RNG** R19E

WELL 13-16 PLEASANT VALLEY UINTAH **CO.,** UTAH

analex
A GEOSCIENCE EXTENSION OF XCO

CORE REPORT: Core# 2 Interval 4242-4300

Core Bit and Tool Description Bit No. 8180621 Size: 7 7/8 Type: MC-20

Footage Attempted 4242-4302 Footage Drilled 4242-4300 Recovery (%)

CORE DESCRIPTION:

4242-4243	SH medgy, hd, fis, plty, med calc, tr pyr, fos tracks, carb in places, sl dull yel cut & flor
4243-4244	SH medgy, hd, fis, plty, calc cmt, tr pyr, no flor, sl dull yel cut, no stn
4244-4245	SH medgy, hd, fis, plty, calc cmt, tr pyr, musc & phlog clasts, NSFOC
4245-4246	SH medgy, hd, fis, plty, calc cmt, s tr phlog clasts, sl yel flor, p-med cut, dull yel stn
4246-4247	SH medgy, hd, fis, plty, calc cmt, s tr phlog clasts, NSFOC
4247-4248	SH medgy, hd, fis, plty, calc cmt, vis lam, low amp dep, no flor, sl yel cut, n stn
4248-4249	SH medgy-gygrn, fis, hd, plty, calc cmt, tr pyr musc, NSFOC
4249-4250	SH medgy-gygrn, hd, fis, plty, calc cmt, NSFOC
4250-4251	SH medgy-gygrn, hd, fis, plty, calc cmt, NSFOC
4251-4252	SH medgy-gygrn, hd, fis, plty, calc cmt, tr phlog clasts, NSFOC
4252-4253	SH medgy-gygrn, hd, fis, plty, calc cmt, vis bdg planes, tr PYR, NSFOC
4253-4254	SH medgy-gygrn, hd, fis, plty, calc cmt, vis bdg planes, NSFOC
4254-4255	SH medgy-gygrn, hd, fis, plty, calc cmt, vis bdg planes, NSFOC
4255-4256	SH medgy-gygrn, hd, fis, plty, calc cmt, tr musc & phlog, NSFOC
4256-4257	SH medgy-gygrn, hd, fis, plty, calc cmt, tr musc & phlog, NSFOC
4257-4258	SH medgy-gygrn, hd, fis, plty, calc cmt, sl carb along frac, NSFOC
4258-4259	SH medgy-gygrn, hd, fis, plty, calc cmt, sml lam fl channels, sl frac infill, NSFOC
4259-4260	SH med-dkgy, hd, fis, plty, calc cmt, NSFOC
4260-4261	SS dkgy-gyamb, vf-c gr, ang-rnd, p srt, p ø, sl mlky cut, n flor, n stn
4261-4262	SS dkgy-gyamb, vf-f gr, ang-rnd, p srt, p ø , yel flor, f mlky cut
4262-4263	SH medgy, hd, fis, plty, calc cmt, tr PYR, sml redbrn SH intcl, NSFOC
4263-4264	SH medgy, hd, fis, plty, calc cmt, tr PYR, sml redbrn SH intcl, NSFOC

OPERATOR NATURAL GAS CORP. OF CALIF. **SEC** 16 **TWP** 13S **RNG** R19E

WELL 13-16 PLEASANT VALLEY UINTAH **CO.,** UTAH

analex
A GEOSCIENCE EXTENSION OF XCO

4264–4265	SH	medgy-gygrn, hd, fis, plty, calc cmt, tr PYR, tr musc, NSFOC
4265–4266	LS	gywh, v hd, mic xln, micrite, p ϕ, NSFOC
4266–4267	SS	wh-gywh, f gr, sbang-sbrnd, p-mod srt, calc cmt, fos, carb, NSFOC
4267–4268	LS	gywh-medgy, v hd, mic xln, micrite, sdy, lam SH flows, vp ϕ slty
4268–4269	SH	medgy-gygrn, hd, fis, blky, v calc, p ϕ, lmy, NSFOC
4269–4270	SH	med-dkgy, v hd, fis, plty, sl calc, vp ϕ, NSFOC
4270–4271	SH	med-dkgy, v hd, fis, plty, sl calc, vp ϕ, NSFOC
4271–4272	SH	medgy-gygrn, v hd, fis, plty, calc filled frac, tr carb frag, NSFOC
4272–4273	SH	medgy-gygrn, hd, fis, plty, tr musc, NSFOC
4273–4274	SH	medgy-gygrn, hd, fis, plty, tr muse, NSFOC
4274–4275	SH	medgy-gygrn, hd, fis, plty, tr musc, sme musc fl pat, sl slty, NSFOC
4275–4276	SH	medgy-gygrn, v hd, fis, plty, calc cmt
4276–4277	SH	medgy-gygrn, v hd, fis, plty, calc cmt
4277–4278	SS	whgy-wh, vf-f gr, sbang, p srt, mod calc, tt, vp ϕ, tr musc, NSFOC
4278–4279	SS	whgy-wh, vf-f gr, sbang, calc cmt, fr srt, v sl flor, p cut, n stn, v tt, p ϕ
4279–4280	SH	medgy-gygrn, frm-hd, fis, plty, NSFOC
4280–4281	SH	medgy-gygrn, frm-hd, fis, plty, NSFOC
4281–4282	SH	medgy-gygrn, frm-hd, fis, plty, NSFOC
4282–4283	SS	gywh, vf-f gr, sbang-sbrnd, p-fr srt, calc cmt, v tt, p ϕ, NSFOC
4283–4284	SS	gywh, vf-f gr, sbang-sbrnd, p-fr srt, calc cmt, v tt, p ϕ, NSFOC
4284–4285	SH	medgy-gywh, v hd, fis, plty, slty-sndy, NSFOC
4285–4286	SH	medgy-gywh, v hd, fis, plty, slty-sdy, NSFOC
4286–4287	SH	dk-medgy, hd, fis, plty-splty, calc cmt, NSFOC
4287–4288	SH	dk-medgy, hd, fis, plty-splty, calc cmt, vis lam bdg, NSFOC
4288–4289	SH	dk-medgy, hd, fis, plty-splty, calc cmt, vis lam bdg, NSFOC
4289–4290	SH	dk-medgy, hd, fis, plty-splty, calc cmt, vis lam bdg, NSFOC
4290–4291	SS	wh-whgy, vf-f gr, sbang, p-fr srt, 5% ϕ, occ slty, NSFOC
4291–4292	SS	wh-whgy, vf-f gr, sbang, p-fr srt, 5% ϕ, occ slty, NSFOC

OPERATOR NATURAL GAS CORP. OF CALIF. **SEC** 16 **TWP** T9S **RNG** R19E

WELL 13-16 PLEASANT VALLEY UINTAH **CO.,** UTAH

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A GEOSCIENCE EXTENSION OF XCO

4292-4293	SS wh-whgy, vf-f gr, sbang-ang, p-fr srt, occ musc, 5% ϕ, occ slty, NSFOC
4293-4294	SS wh-whgy, vf gr, sbang, fr srt, calc cmt, vp ϕ 1-2%, v tt, NSFOC
4294-4295	SS wh-whgy, vf gr, sbang-ang, fr srt, calc cmt, vp ϕ 1-2%, v tt, NSFOC
4295-4296	SS gywh, vf gr, sbang-sbrnd, fr srt, calc cmt, yel flor, sl yel mlky cut
4296-4297	SS gywh, vf gr, sbang-sbrnd, fr srt, calc cmt, intbd SH, yel flor, sl yel mlky cut
4297-4298	SS gywh, vf gr grdg to f gr @ 4298, sbang-sbrnd, fr srt, calc cmt, yel flor, sl yel mlky cut
4298-4299	SS gywh-wh, vfgr, sbang, p-fr srt, calc cmt, sl pet oil, NSFOC
4299-4300	SS dkgy-wh, vf gr, sbang-sbrnd, p-fr srt, calc cmt, vis oil, dull orng-yel flor, strmg yel-mlky cut, yel-orng stn, 5-10% ϕ
4300-4301	NOT RECOVERED
4301-4302	NOT RECOVERED

NOTE: Fracturing between 4265 and 4267, fracturing from 4278½ to 4279½, fracturing from 4292-4296

OPERATOR NATURAL GAS CORP. OF CALIF. **SEC** 16 **TWP** T9S **RNG** R19E

WELL 13-16 PLEASANT VALLEY UINTAH **CO.,** UTAH

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A GEOSCIENCE EXTENSION OF XCO

CORE REPORT: Core# 3 Interval 4302-4328

Core Bit and Tool Description Bit No. 81B0521 Size: 7 7/8 Type: MC-20

Footage Attempted _____ Footage Drilled 4302-4328 Recovery (%) _____

CORE DESCRIPTION:

4302-4303	SS wh, vf-f gr, sbang-sbrnd, fr srt, calc cmt, vis oil stn, yel flor, mod milky cut, fnt yel-grn-orng stn , mod ∅
4303-4304	SS wh-clr, vf-m gr, sbang-sbrnd, calc cmt, vis oil, sl yel flor, strm yel cut, fnt yel orng stn
4304-4305	SS wh-clr, vf-med gr, sbang-sbrnd, calc cmt, vis oil, sl yel flor, strm yel cut, fnt yel orng stn
4305-4306	SH medgy-gygrn, hd, fis, plty, calc cmt, tr musc, NSFOC
4306-4307	SS wh-clr, vf-f gr, sbang, fr srt, calc cmt, occ musc, occ intbd SH, vp ∅
4307-4308	SS wh-clr, vf-f gr, sbang, fr srt, calc cmt, occ musc, occ intbd SH, vp ∅
4308-4309	SH medgy-gygrn, hd, fis, plty, conch frac, occ pyr, cln, NSFOC
4309-4310	SH medgy-gygrn, hd, fis, plty, conch frac, occ pyr, cln, NSFOC
4310-4311	SLTST gybrn-medgy, hd-vhd, calc cmt, arg, occ biot & musc, sl flor, n cut, n stn
4311-4312	SH medgy-gygrn, hd, fis, plty, calc cmt, var calcite, NSFOC
4312-4313	SH medgy-gygrn, hd, fis, plty, calc cmt, var calc, NSFOC
4313-4314	SH medgy-gygrn, hd, fis, plty, calc cmt, var calc, NSFOC
4314-4315	SH medgy-gygrn, hd, fis, plty, calc cmt, var calc, NSFOC
4315-4316	SH medgy-gygrn, hd, fis, plty, calc cmt, var calc, NSFOC
4316-4317	SH medgy-gygrn, hd, fis, plty, calc cmt, var calc, occ intbd vf gr SS, NSFOC
4317-4318	SH medgy-gygrn, hd, fis, plty, calc cmt, var calc, occ intbd vf gr SS, NSFOC
4318-4319	SH medgy-gygrn, hd, fis, plty, calc cmt, var calc, occ intbd vf gr SS, NSFOC
4319-4320	SH medgy-gygrn, hd, fis, plty, calc cmt, occ pyr, NSFOC
4320-4321	SH medgy-gygrn, hd, fis, plty, calc cmt, occ pyr, NSFOC
4321-4322	SH medgy-gygrn, hd, fis, plty, calc cmt, occ pyr, NSFOC

OPERATOR NATURAL GAS CORP. OF CALIF. **SEC** 16 **TWP** T9S **RNG** R19E

WELL 13-16 PLEASANT VALLEY UINTAH **CO.,** UTAH

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4322-4323	SH medgy-gygrn, hd, fis, plty, calc cmt, occ pyr, NSFOC
4323-4324	SH medgy-gygrn, hd, fis, plty, calc cmt, occ musc, NSFOC
4324-4325	SH medgy-gygrn, hd, fis, plty, calc cmt, occ musc, NSFOC
4325-4326	SH medgy-gygrn, hd, fis, plty, calc cmt, occ musc, NSFOC
4326-4327	SH medgy-gygrn, hd, fis, plty, calc cmt, occ musc, NSFOC
4327-4328	SH medgy-gygrn, hd, fis, plty, calc cmt, occ musc, NSFOC

OPERATOR NATURAL GAS CORP. OF CALIF. **SEC** 16 **TWP** T9S **RNG** R19E

WELL 13-16 PLEASANT VALLEY UINTAH **CO.,** UTAH

analex
A GEOSCIENCE EXTENSION OF XCO

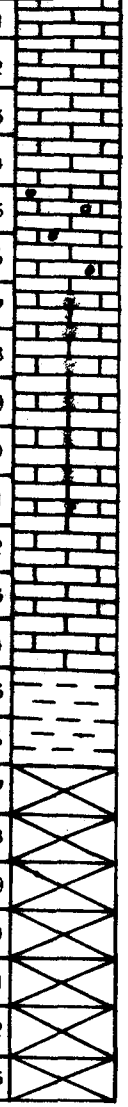
CORE REPORT: Core# 1 Interval 5050-5093

Core Bit and Tool Description BIT No. TW 6277 SIZE: 7 7/8 TYPE: MC-20

Footage Attempted 5050-5093 Footage Drilled 5050-5093 Recovery (%)

CORE DESCRIPTION:

5050-5051	SH gygrn, frm, blky-plty, sbfis-fis, conch frac, sl calc
5051-5052	SH gygrn, frm , sbfis-fis, blky, conch frac, sl calc, sl slty
5052-5053	SH gygrn, frm, sbfis-fis, blky, sl calc, conch frac, sl slty
5053-5054	SH dkgygrn, frm, sbfis-fis, blky-plty, sl calc, conch frac
5054-5055	SH dkgygrn, frm, sbfis-fis, blky-plty, sl calc, conch frac, tr fos frag
5055-5056	SH dkgygrn, frm, sbfis-fis, blky-plty, sl calc, conch frac, tr fos frag
5056-5057	SS med-ltbrn, vf gr, mod fri, fr srt, sbang, pet od, bri grn flor, mod mlky cut, grn stn, gas bubbles, p-f ∅, less than 10%
5057-5058	SS med-ltbrn, vf gr, mod fri, fr srt, sbang, pet od, bri grn flor, mod mlky cut, grn stn, gas bubbles, p-f ∅, less than 10%
5058-5059	SS med-ltbrn, vf gr, mod fri, fr srt, sbang, pet od, bri grn flor, mod mlky cut, grn stn, gas bubbles, p-f ∅, less than 10%
5059-5060	SLTST dkgygrn, frm-hrd, blky, mod calc conch frac
5060-5061	SH gygrn, frm, sbfis-fis, blky, sl calc, conch frac
5061-5062	SH gygrn, frm, sbfis-fis, blky, sl calc, conch frac
5062-5063	NOT RECOVERED
5063-5064	NOT RECOVERED
5064-5065	SH dkgygrn, frm, sbfis-fis, blky, sl calc, conch frac
5065-5066	SH dkgy, frm, sbfis-fis, blky, sl calc, conch frac
5066-5067	SH dkgygrn, hd, sbfis-fis, blky-plty, sl calc, conch frac, tr PYR, tr fos leaves
5067-5068	SH dkbrn-blk, hd, sbfis-fis, blky, v calc, conch frac, occ lam
5068-5069	SH dkbrn-blk, hd, sbfis-fis, blky, v calc, conch frac, lam, limey
5069-5070	LS dkbrn, v hd, mic xln, micrite, mod arg, rthy, v shaley, vp ∅



5370-5371	LS dkbrn, v hd, mic xln, micrite, mod arg, rthy, v shaley, vp ∅
5371-5372	LS dkbrn, v hd, mic xln, micrite, mod arg, rthy, v shy, vp ∅
5372-5373	LS dkbrn, v hd, mic xln, micrite, mod arg, rthy, v shy, vp ∅
5373-5374	LS dkbrn, v hd, mic xln, micrite, mod arg, rthy, v shy, vp ∅
5374-5375	LS dkbrn-blk, v hd, mic xln, micrite, mod arg, tr ool
5375-5376	LS dkbrn-blk, v hd, mic xln, micrite, mod arg, tr ool
5376-5377	LS medbrn, v hd, mic xln, micrite, mod arg, tr ool
5377-5378	LS medbrn, v hd, mic xln, micrite, mod arg, tr ool
5378-5379	LS medbrn, v hd, mic xln, micrite, mod arg, tr ool, NSFOC
5379-5380	LS dkbrn, v hd, mic xln, micrite, plty, vp ∅
5380-5381	LS dkbrn, v hd, mic xln, micrite, plty, tr fos, vp ∅
5381-5382	LS dkbrn-blk, v hd, mic xln, micrite, mod arg, vp ∅, NSFOC
5382-5383	LS dkbrn-blk, v hd, mic xln, micrite, mod arg, vp ∅, NSFOC
5383-5384	LS dkbrn-blk, v hd, mic xln, micrite, mod arg, vp ∅, NSFOC
5384-5385	SH dkbrn-blk, hd, sbfis-fis, blky, sl calc
5385-5386	SH dkbrn, hd, sbfis-fis, blky, n-sl calc, conch frac
5386-5387	NOT RECOVERED
5387-5388	NOT RECOVERED
5388-5389	NOT RECOVERED
5389-5390	NOT RECOVERED
5390-5391	NOT RECOVERED
5391-5392	NOT RECOVERED
5392-5393	NOT RECOVERED

NATURAL GAS CORPORATION OF CALIFORNIA

85 South 200 East
Vernal, Utah 84078

July 19, 1982

Division of Oil, Gas & Mining
4241 State Office Building
Salt Lake City, UT 84114

Mr. E. W. Guynn
Minerals Management Service
1745 West 1700 South, Suite 2000
Salt Lake City, UT 84104

Mr. Bob Gilmore
DeGolyer & MacNaughton
No. 1 Energy Square
Dallas, TX 75206

Re: NGC #13-16 State
Section 16, T.9S., R.19E.
Uintah County, UT

Gentlemen:

Attached are copies of Form OGC-3, Well Completion or Recompletion Report and Log, for the above captioned well.

Sincerely,

Wm Ryan

William A. Ryan
Petroleum Engineer

RECEIVED
JUL 22 1982
DIVISION OF
OIL, GAS & MINING

/kh

Attachment

cc: Operations
C. T. Clark
E. R. Henry
D. McGinley
R. Boschee
J. M. Kunz
K. E. Reed
I. Chai
S. Furtado

Form OGC-3

STA[redacted] UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS, AND MINING

SUBMIT IN DU[redacted]TE*
(See other inst[redacted]ns on reverse side)

56 64 01 12

WELL COMPLETION OR RECOMPLETION REPORT AND LOG*

1a. TYPE OF WELL: OIL WELL ☑ GAS WELL ☐ DRY ☐ Other

b. TYPE OF COMPLETION: NEW WELL ☑ WORK OVER ☐ DEEP-EN ☐ PLUG BACK ☐ DIFF. RESVR. ☐ Other

2. NAME OF OPERATOR: Natural Gas Corporation of California

3. ADDRESS OF OPERATOR: 85 South 200 East, Vernal, UT 84078

4. LOCATION OF WELL (*Report location clearly and in accordance with any State requirements*)*
At surface 800' FWL, 2122' FSL, Sec. 16, T.9S., R.19E.
At top prod. interval reported below
At total depth

NWSW

5. LEASE DESIGNATION AND SERIAL NO.: ML-35713
6. IF INDIAN, ALLOTTEE OR TRIBE NAME:
7. UNIT AGREEMENT NAME:
8. FARM OR LEASE NAME: State
9. WELL NO.: NGC 13-16 State
10. FIELD AND POOL, OR WILDCAT:
11. SEC., T., R., M., OR BLOCK AND SURVEY OR AREA: Sec. 16, T.9S., R.19E.

14. PERMIT NO.: 43-047-~~31128~~ DATE ISSUED: 12-9-81
12. COUNTY OR PARISH: Uintah
13. STATE: Utah

15. DATE SPUDDED: 1-16-82
16. DATE T.D. REACHED: 2-4-82
17. DATE COMPL. (*Ready to prod.*): No Production
18. ELEVATIONS (DF, RKB, RT, GR, ETC.)*: 4705' GR
19. ELEV. CASINGHEAD:

20. TOTAL DEPTH, MD & TVD: 7475
21. PLUG, BACK T.D., MD & TVD: 7041
22. IF MULTIPLE COMPL., HOW MANY*:
23. INTERVALS DRILLED BY: →
ROTARY TOOLS:
CABLE TOOLS:

24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)*: 4083-6842
25. WAS DIRECTIONAL SURVEY MADE: No

26. TYPE ELECTRIC AND OTHER LOGS RUN: DIL, GR, SP, FDC-CNL, Cal., BHC Sonic- Sonic F-log Sample
27. WAS WELL CORED: No

28. CASING RECORD (*Report all strings set in well*)

CASING SIZE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
9-5/8	24#	300'	12-1/4	To surface	
4-1/2	11.6#	7041'	7-7/8	1330 sx	

29. LINER RECORD

SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)

30. TUBING RECORD

SIZE	DEPTH SET (MD)	PACKER SET (MD)
No tubing		

31. PERFORATION RECORD (*Interval, size and number*)
6842-6852-6853-6853½-6602-6603-6604
1 SPF (8 shots)
4130 (4 shots) (squeeze) 4382,83¼,84½,84¾,86
4318,19,19-3/4,20½,21-3/4,23-3/4,24 (12 shots)
4083, 4084½, 4085½,4086-3/4,4088,4089¼ (6 shots)

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED
6842-6604	110,000# sand, 66,280 gal foam 14,980 liquid + 1000 gal acid
4382-4318	29 bbls. diesel
4083-4089½	27 bbls. diesel

33.* PRODUCTION

DATE FIRST PRODUCTION: No prod.
PRODUCTION METHOD (*Flowing, gas lift, pumping—size and type of pump*): No prod.
WELL STATUS (*Producing or shut-in*): SI pending eng. evaluation

DATE OF TEST	HOURS TESTED	CHOKE SIZE	PROD'N. FOR TEST PERIOD	OIL—BBL.	GAS—MCF.	WATER—BBL.	GAS-OIL RATIO
4-30-82	24		→	0	0	160	

FLOW. TUBING PRESS.	CASING PRESSURE	CALCULATED 24-HOUR RATE	OIL—BBL.	GAS—MCF.	WATER—BBL.	OIL GRAVITY-API (CORR.)
		→	0	0	160	

34. DISPOSITION OF GAS (*Sold, used for fuel, vented, etc.*): No gas
TEST WITNESSED BY: Joe Duncan

35. LIST OF ATTACHMENTS: Geological report to follow.

36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records

SIGNED Wm Ryan W. A. Ryan TITLE Petroleum Engineer DATE 7/19/82

*(See Instructions and Spaces for Additional Data on Reverse Side)

INSTRUCTIONS

General: This form is designed for submitting a complete and correct well completion report and log on all types of lands and leases to either a Federal agency or a State agency, or both, pursuant to applicable Federal and/or State laws and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local, area, or regional procedures and practices, either are shown below or will be issued by, or may be obtained from, the local Federal and/or State office. See instructions on items 22 and 24, and 33, below regarding separate reports for separate completions.
If not filed prior to the time this summary record is submitted, copies of all currently available logs (drillers, geologists, sample and core analysis, all types electric, etc.), formation and pressure tests, and directional surveys, should be attached hereto, to the extent required by applicable Federal and/or State laws and regulations. All attachments should be listed on this form, see item 35.
Item 4: If there are no applicable State requirements, locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local State or Federal office for specific instructions.
Item 18: Indicate which elevation is used as reference (where not otherwise shown) for depth measurements given in other spaces on this form and in any attachments.
Items 22 and 24: If this well is completed for separate production from more than one interval zone (multiple completion), so state in item 22, and in item 24 show the producing interval, or intervals, top(s), bottom(s) and name(s) (if any) for only the interval reported in item 33. Submit a separate report (page) on this form, adequately identified, for each additional interval to be separately produced, showing the additional data pertinent to such interval.
Item 29: *"Sacks Cement":* Attached supplemental records for this well should show the details of any multiple stage cementing and the location of the cementing tool.
Item 33: Submit a separate completion report on this form for each interval to be separately produced. (See instruction for items 22 and 24 above.)

37. SUMMARY OF POROUS ZONES:
SHOW ALL IMPORTANT ZONES OF POROSITY AND CONTENTS THEREOF; CORED INTERVALS; AND ALL DRILL-STEM TESTS, INCLUDING DEPTH INTERVAL TESTED, CUSHION USED, TIME TOOL OPEN, FLOWING AND SHUT-IN PRESSURES, AND RECOVERIES

FORMATION	TOP	BOTTOM	DESCRIPTION, CONTENTS, ETC.

38. GEOLOGIC MARKERS

NAME	TOP MEAS. DEPTH	TOP TRUE VERT. DEPTH
Green River	1165	
Oil Shale Facies	1870	
Delta Facies	2950	
Green Shale Fac.	3855	
Black Shale Fac.	5278	
Green River Lime	5795	
Wasatch	5970	

cc: Div. OG&M; MMS; Operations; CTClark; ERHenry; DMcGinley; RBoschee; IChai; SFurtado; JMKunz; KEReed; DeGolyer

Form OGC-1b

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS, AND MINING

SUBMIT IN TRIPLICATE (Other instructions on reverse side)

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

1. OIL WELL [X] GAS WELL [ ] OTHER

2. NAME OF OPERATOR: Natural Gas Corporation of California

3. ADDRESS OF OPERATOR: 85 South 200 East, Vernal, UT 84078

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface: 800' FWL 2122' FSL NW SW Section 16, T.9S., R.19E.

5. LEASE DESIGNATION AND SERIAL NO.: ML-35713

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

7. UNIT AGREEMENT NAME:

8. FARM OR LEASE NAME: State

9. WELL NO.: NGC 13-16 State

10. FIELD AND POOL, OR WILDCAT:

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Section 16, T.9S., R.19E.

14. PERMIT NO.: 43-047-31128

15. ELEVATIONS (Show whether DF, RT, GR, etc.): 4705' GR

12. COUNTY OR PARISH: Uintah

13. STATE: Utah

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:

TEST WATER SHUT-OFF	[ ]	PULL OR ALTER CASING	[ ]
FRACTURE TREAT	[ ]	MULTIPLE COMPLETE	[ ]
SHOOT OR ACIDIZE	[ ]	ABANDON*	[ ]
REPAIR WELL	[ ]	CHANGE PLANS	[ ]
(Other) Request Temporary Surface Pit	[X]		

SUBSEQUENT REPORT OF:

WATER SHUT-OFF	[ ]	REPAIRING WELL	[ ]
FRACTURE TREATMENT	[ ]	ALTERING CASING	[ ]
SHOOTING OR ACIDIZING	[ ]	ABANDONMENT*	[ ]
(Other)			[ ]

(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

Operator requests an unlined surface pit per NTL-2B, Sec. VI. The subject pit would be used as a blow down pit when the well is flow tested.

If you require additional information, please contact me at our Vernal office - telephone 789-4573.

RECEIVED
NOV 23 1984
DIVISION OF OIL, GAS & MINING

APPROVED BY THE STATE OF UTAH DIVISION OF OIL, GAS, AND MINING
DATE: 12/28/84
BY: John R. Baza

18. I hereby certify that the foregoing is true and correct

SIGNED: William A. Ryan TITLE: Petroleum Engineer DATE: Nov. 15, 1984

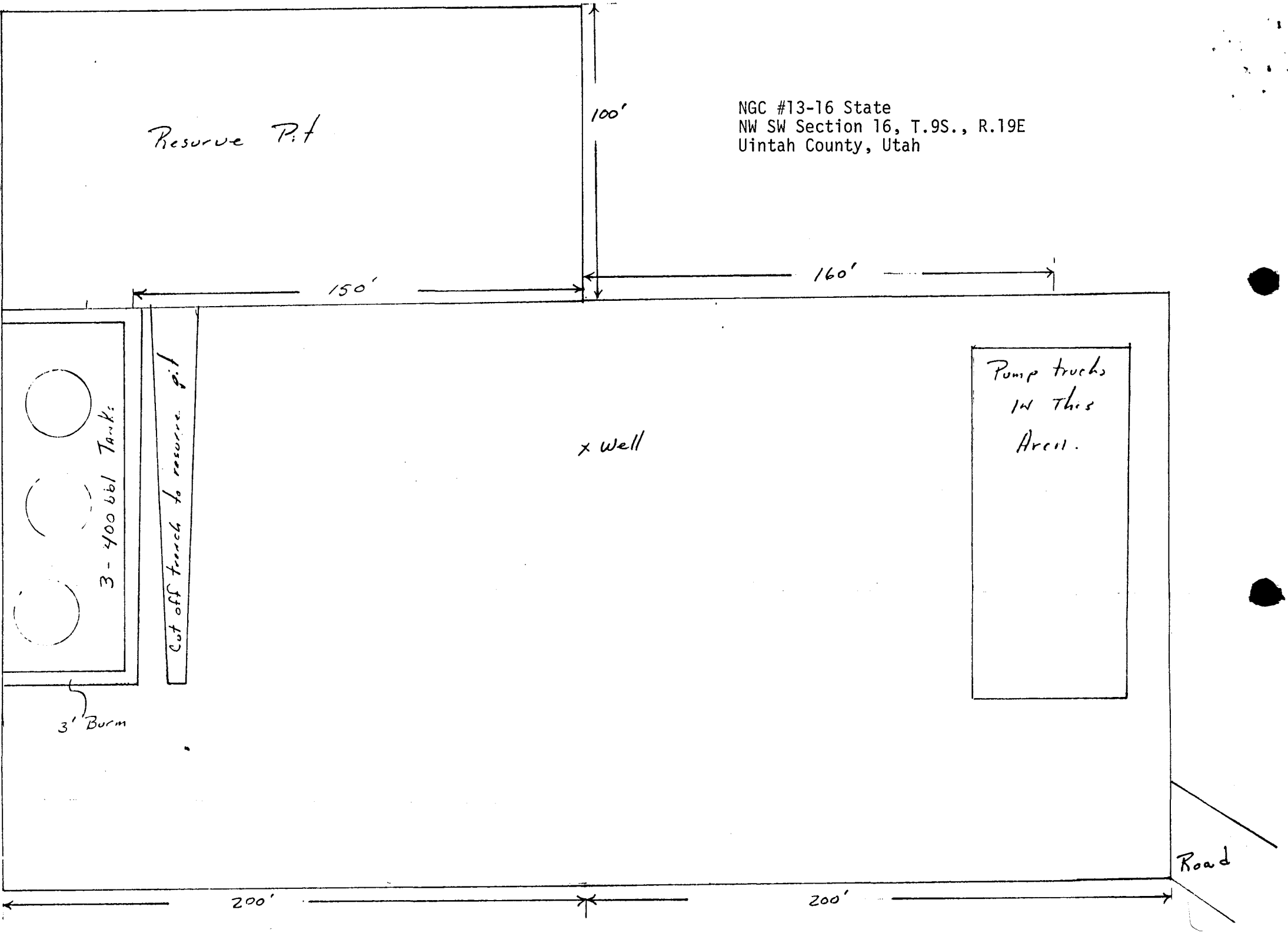
(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

*See Instructions on Reverse Side

NGC #13-16 State
NW SW Section 16, T.9S., R.19E
Uintah County, Utah



Natural Gas
Corporation of
California

NGC NGC NGC NGC NGC NGC NGC NGC NGC NGC NGC NGC NGC NGC NGC

July 18, 1985

State of Utah
Division of Oil, Gas & Mining
355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203

SUBJECT: NGC 13-16
Riverbend Prospect
Section 16, T9S, R19E
Uintah County, Utah
Lease # ML-35713

Attn: Mr. John Baza

Attached is form OGC-1b, Sundry Notices and Reports on Wells, proposing a procedure for the plugging and abandonment of the above subject wellsite.

We would like to begin plugging operations next week if at all possible. Your prompt attention to this matter will be greatly appreciated.

Very truly yours,

Kathy Knutson

Kathy Knutson
Technical Assistant

cc: S. Furtado Rm 1449
Land Dept
L. Jorgensen Rm 1421
Operations/Denver
Files

RECEIVED
JUL 1 9 1985
DIVISION OF OIL
GAS & MINING

85 South 200 East
Vernal, Utah 84078
(801) 789-4573

Form OGC-1b

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS, AND MINING

SUBMIT IN TRIPLICATE
(Other instructions on reverse side)

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

1. OIL WELL ☐ GAS WELL ☐ OTHER DRY

2. NAME OF OPERATOR: Natural Gas Corporation of California

3. ADDRESS OF OPERATOR: 85 South 200 East, Vernal, Utah 84078

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface: 800' FWL & 2122' FSL, NW/SW

5. LEASE DESIGNATION AND SERIAL NO.: ML-35713

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

7. UNIT AGREEMENT NAME:

8. FARM OR LEASE NAME: Riverbend Prospect

9. WELL NO.: 13-16

10. FIELD AND POOL, OR WILDCAT: Wildcat

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Sec 16, T9S, R19E

14. PERMIT NO.: 43-047-31128

15. ELEVATIONS (Show whether DF, RT, GR, etc.): 4682' NGL

12. COUNTY OR PARISH: Uintah

13. STATE: Utah

16. **Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data**

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	☐	PULL OR ALTER CASING	☐	WATER SHUT-OFF	☐	REPAIRING WELL	☐
FRACTURE TREAT	☐	MULTIPLE COMPLETE	☐	FRACTURE TREATMENT	☐	ALTERING CASING	☐
SHOOT OR ACIDIZE	☐	ABANDON*	X ✓	SHOOTING OR ACIDIZING	☐	ABANDONMENT*	☐
REPAIR WELL	☐	CHANGE PLANS	☐	(Other)			☐
(Other)			☐	(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)			

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

Operator proposes to plug and abandon the subject well. 300' of 9 5/8", 36.0#, K-55 casing was set and cemented to surface. The well was drilled to a total depth of 7475' with 4 1/2", 11.6#, N-80 casing set to 7041', top of the cement is at 2000'. Three zones were opened, 6604-6842', 4313-4382', and 4083-4089'. A CIBP was set at 5050' and one was set at 4300'.

We propose to plug well as follows:

1. Set a CIBP @ 3800' (above the top perfs)
2. Fill the hole with 9# mud
3. Squeeze or bull head cement into the annulus between the 4 1/2" and the 9 5/8" casing
4. Place a cement plug from 200' to 400' in the 4 1/2" casing
5. Set a 25 sack cement plug at surface
6. Install a dry hole marker

APPROVED BY THE STATE OF UTAH DIVISION OF OIL, GAS, AND MINING
DATE: 7-18-85
BY: [signature]

18. I hereby certify that the foregoing is true and correct

SIGNED William A Ryan TITLE Petroleum Engineer DATE 7-18-85

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

*See Instructions on Reverse Side

NATURAL GAS CORPORATION OF CALIFORNIA

WELL COMPLETION WORKSHEET

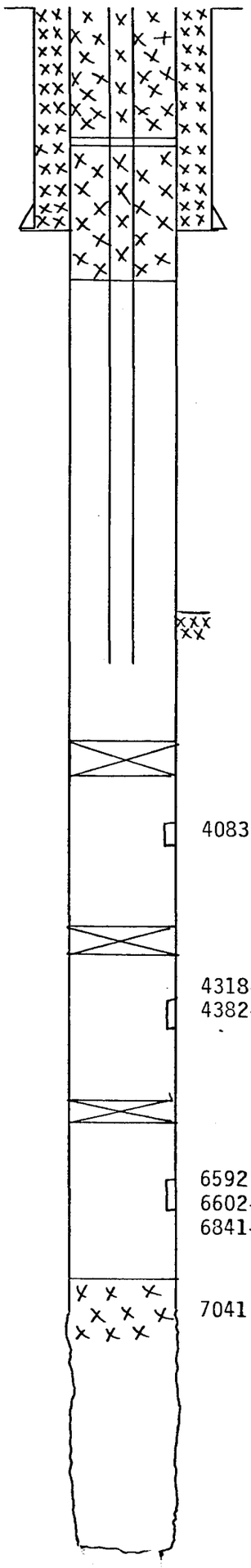
Date
4/1/85

LEASE	Well No.	Location	County	State
ML-35713	13-16	Sec 16, T9S, R19E	Uintah	Utah

WELLHEAD W.P.	ANTICIPATED SURFACE PRESSURE	Little or none

STRING	SIZE	DEPTH SET	GRADE	CPLG	WT.	BURST	
SURFACE	9 5/8"	300'	K-55		36.0		
PROD/INTERM	4 1/2"	7041'	N-80		11.6		
LINER							
TUBING							

KB- 4695'
GL- 4682'



9 5/8" set at 300'

25 sx plug @ surface

200' plug inside the 4 1/2" csg from 200'-400' = 20 sacks

300' plug cement between the 4 1/2" - 9 5/8" =100 sacks

Cement top @ 2000'

CIBP or squeeze perfs and place 200' plug in 4 1/2" casing
(Plug will have to be tagged.)

4083-89.5'

CIBP at 4300'

4318-24' (7 shots)
4382-86' (5 shots)

CIBP @ 5050'

6592' (1 shot)
6602-04' (3 shots)
6841-52' (4 shots)

PBTD 6964'

7041' 4 1/2" csg

TD @ 7475'

F.C.-
TD-

NGC 04

Natural Gas
Corporation of
California

NGC NGC NGC NGC NGC NGC NGC NGC NGC NGC NGC NGC NGC NGC NGC NGC NGC

RECEIVED
AUG 05 1985
DIVISION OF OIL
GAS & MINING

August 2, 1985

State of Utah
Division of Oil, Gas & Mining
355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203

SUBJECT: STATE 13-16
Section 16, T9S, R19E
Uintah County, Utah
ML-35713

Gentlemen,

Attached is Form OGC-1b, Sundry Notices and Reports on Wells, reporting the abandonment of the above subject well. This location will be recontoured and seeded as weather permits.

Very truly yours,

Kathy Knutson

Kathy Knutson
Technical Assistant

/kk
attachments

cc: BLM (info only)
Ralph E. Davis Assoc, Inc.
S. Furtado
Land Dept.
Files

85 South 200 East
Vernal, Utah 84078
(801) 789-4573

Form OGC-1b

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS, AND MINING

SUBMIT IN TRIPLICATE (Other instructions on reverse side)

5. LEASE DESIGNATION AND SERIAL NO.: ML-35713

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

RECEIVED AUG 05 1985 DIVISION OF OIL GAS & MINING

1. OIL WELL [ ] GAS WELL [XX] OTHER

7. UNIT AGREEMENT NAME:

2. NAME OF OPERATOR: Natural Gas Corporation of California

8. FARM OR LEASE NAME: State

3. ADDRESS OF OPERATOR: 85 South 200 East, Vernal, Utah 84078

9. WELL NO.: 13-16

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements. See also space 17 below.) At surface: 800' FWL & 2122' FSL, NW/SW

10. FIELD AND POOL, OR WILDCAT: Pariette Bench

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Sec 16, T9S, R19E

14. PERMIT NO.: 43-047-31128

15. ELEVATIONS (Show whether DF, RT, GR, etc.): 4705' NGL

12. COUNTY OR PARISH: Uintah

13. STATE: Utah

16. **Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data**

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	[ ]	PULL OR ALTER CASING	[ ]	WATER SHUT-OFF	[ ]	REPAIRING WELL	[ ]
FRACTURE TREAT	[ ]	MULTIPLE COMPLETE	[ ]	FRACTURE TREATMENT	[ ]	ALTERING CASING	[ ]
SHOOT OR ACIDIZE	[ ]	ABANDON*	[ ]	SHOOTING OR ACIDIZING	[ ]	ABANDONMENT*	[XX]
REPAIR WELL	[ ]	CHANGE PLANS	[ ]	(Other)			[ ]
(Other)			[ ]				

(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

MOVE IN AND RIG UP PRAIRIE GOLD WELL SERVICE TO PLUG AND ABANDON WELL 7/26/85. BLOW WELL DOWN, SIP 290, SLIGHT WATER FLOW. NU BOP's, TIH WITH GEARHART GOUGE RING, CASING OK. SET CIBP @3790', TIH W/TBG, LOAD HOLE WITH 9# MUD. PUMP 5 SACK CEMENT PLUG ON TOP OF CIBP, PULL OUT TO 400' AND CEMENT TO SURFACE WITH 45 SACKS. HOOKED ONTO BACK SIDE, PUMPED LAST OF MUD OFF WATER TRUCK AND FOLLOWED WITH 100 SACKS CEMENT. REMOVE WELLHEAD, CUT OFF CASING AND INSTALL DRY HOLE MARKER. FILL IN PIT.

LOCATION WILL BE RECONTOURED AND SEEDED WHEN WEATHER PERMITS.

APPROVED BY THE STATE OF UTAH DIVISION OF OIL, GAS, AND MINING
DATE: 8/7/85
BY: John R. Baza

18. I hereby certify that the foregoing is true and correct

SIGNED: Kathy Knutson TITLE: Technical Assistant DATE: 7-31-85

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

*See Instructions on Reverse Side

Form OGC-1b

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS, AND MINING

SUBMIT IN TRIPLICATE
(Other instructions on reverse side)

RECEIVED
OCT 21 1985
DIVISION OF OIL GAS & MINING

12

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

5. LEASE DESIGNATION AND SERIAL NO.: ML-35713

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

7. UNIT AGREEMENT NAME:

1. OIL WELL ☐ GAS WELL ☐ OTHER: Abandoned

2. NAME OF OPERATOR: Natural Gas Corporation of California

8. FARM OR LEASE NAME: STATE

3. ADDRESS OF OPERATOR: 85 South 200 East, Vernal, Utah 84078

9. WELL NO.: 13-16

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface: 800' FWL & 2122' FSL, NW/SW

10. FIELD AND POOL, OR WILDCAT: Riverbend

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Sec 16, T9S, R19E

14. PERMIT NO.: 43-047-31128

15. ELEVATIONS (Show whether DF, RT, GR, etc.): 4705' NGL

12. COUNTY OR PARISH: Uintah

13. STATE: Utah

16. **Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data**

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	☐	PULL OR ALTER CASING	☐	WATER SHUT-OFF	☐	REPAIRING WELL	☐
FRACTURE TREAT	☐	MULTIPLE COMPLETE	☐	FRACTURE TREATMENT	☐	ALTERING CASING	☐
SHOOT OR ACIDIZE	☐	ABANDON*	☐	SHOOTING OR ACIDIZING	☐	ABANDONMENT*	☐
REPAIR WELL	☐	CHANGE PLANS	☐	(Other)			☐
(Other) REHABILITATION WORK COMPLETE			☐	(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)			

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

Operator advises that rehabilitation of the above subject wellsite has been completed. The entire disturbed area was recontoured and seeded with an approved seed mixture.

18. I hereby certify that the foregoing is true and correct

SIGNED Kathy Knutson TITLE Technical Assistant DATE 10-19-85

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

*See Instructions on Reverse Side

PYA

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
VERNAL DISTRICT OFFICE
170 South 500 East
Vernal, Utah 84078

IN REPLY
REFER TO:

3162.5
(U-8010)

RECEIVED
FEB 05 1986
DIVISION OF
OIL, GAS & MINING

January 31, 1986

Mr. John Baza
Utah State Department of Natural Resources and Energy
Division of Oil, Gas, and Mining
3 Triad Center, Suite 360
355 West North Temple
Salt Lake City, Utah 84180-1203

Re: Natural Gas Corp. of California
NGC No. 13-16 State Well
Sec. 16, T.9S., R.19E., SLM
API No. 43-047-31128

Dear Mr. Baza:

On August 22, 1985, we were advised by our State Director that we should no longer exercise regulatory authority over wells drilled on state surface and mineral estate with regard to methods of disposal of produced water. Consequently, we are forwarding the referenced application to you for disposition.

If you have any questions concerning this matter, please contact Alvin Burch at (801) 789-1362.

Sincerely,

Alvin L. Burch

Alvin L. Burch
Acting Area Manager
Diamond Mountain Resource Area

Encl: 1 Sundry Notice

cc: Natural Gas Corp of California

Form 9-331-1b

SUBMIT IN TRIPLICATE (Other instructions on reverse side)

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS, AND MINING

5. LEASE DESIGNATION AND SERIAL NO.: ML-35713

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

1. OIL WELL [X] GAS WELL [ ] OTHER

7. UNIT AGREEMENT NAME:

RECEIVED FEB 05 1986 DIVISION OF OIL, GAS & MINING

2. NAME OF OPERATOR: Natural Gas Corporation of California

8. FARM OR LEASE NAME: State

3. ADDRESS OF OPERATOR: 85 South 200 East, Vernal, UT 84078

9. WELL NO.: NGC 13-16 State

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface: 800' FWL 2122' FSL NW SW Section 16, T.9S., R.19E.

10. FIELD AND POOL, OR WILDCAT:

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Section 16, T.9S., R.19E.

14. PERMIT NO.: 43-047-31128

15. ELEVATIONS (Show whether DF, RT, GR, etc.): 4705' GR

12. COUNTY OR PARISH: Uintah

13. STATE: Utah

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:

TEST WATER SHUT-OFF	[ ]	PULL OR ALTER CASING	[ ]
FRACTURE TREAT	[ ]	MULTIPLE COMPLETE	[ ]
SHOOT OR ACIDIZE	[ ]	ABANDON*	[ ]
REPAIR WELL	[ ]	CHANGE PLANS	[ ]
(Other) Request Temporary Surface Pit	[X]		

SUBSEQUENT REPORT OF:

WATER SHUT-OFF	[ ]	REPAIRING WELL	[ ]
FRACTURE TREATMENT	[ ]	ALTERING CASING	[ ]
SHOOTING OR ACIDIZING	[ ]	ABANDONMENT*	[ ]
(Other)			[ ]

(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

Operator requests an unlined surface pit per NTL-2B, Sec. VI. The subject pit would be used as a blow down pit when the well is flow tested.

If you require additional information, please contact me at our Vernal office - telephone 789-4573.

STATE WELL

VERNAL DIST.
ENG.
GEOL. a-76
E.S. AH 12-5-84
PET Mike WPD
A.M.

18. I hereby certify that the foregoing is true and correct

SIGNED William A. Ryan TITLE Petroleum Engineer DATE Nov. 15, 1984

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:
11-85-296
BLM

*See Instructions on Reverse Side

EXPRESS MAIL ROUTING SLIP

PAM	2.14	10:00	
TAMI	2.14	10:05	
VICKY		10:10	VC
CLAUDIA	2.14	1:47	g
STEPHANE	2-14	10:33	g
CHARLES	CO	2-14	10:41
RULA	RM	2-14	1:27
MARY ALICE	MAP	2-14	3:41
CONNIE	CO	2-18	7:49
MILLIE	MS	—	8:25

STATE OF UTAH
NATURAL RESOURCES
Oil, Gas & Mining

Norman H. Bangerter, Governor
Dee C. Hansen, Executive Director
Dianne R. Nielson, Ph.D., Division Director

355 W. North Temple • 3 Triad Center • Suite 350 • Salt Lake City, UT 84180-1203 • 801-538-5340

February 13, 1986

Mr. Alvin L. Burch
United States Bureau of Land Management
Vernal District Office
170 South 500 East
Vernal, Utah 84078

Dear Mr. Burch:

RE: Wells Operated by Natural Gas Corporation of California in Duchesne and Uintah Counties

In reference to the wells listed on the attached sheet, several letters from your office were recently received by the Division of Oil, Gas and Mining. The letters advise the Division that the Bureau of Land Management could not exercise regulatory authority over these wells as it pertains to approval of temporary disposal pits at each site. The Division appreciates your consideration of this matter.

For your information, the proposed surface pits requested by the operator were approved by this office on December 20, 1984. In fact, two of the wells have subsequently been plugged and abandoned as indicated on the attached sheet.

Please do not hesitate to contact us again in future matters of this type.

Sincerely,

John R. Baza
Petroleum Engineer

sb
Attachment
cc: D.R. Nielson
R.J. Firth
Well Files
0155T-105-106

Attachment 1

Well No. NGC 11-16
Sec.16, T.9S, R.17E,
Duchesne County

Well No. 44-36 (P&A 7-25-85)
Sec.36, T.8S, R.15E,
Duchesne County

Well No. NGC 33-32 State
Sec.32, T.8S, R.18E,
Uintah County

Well No. NGC 33-2-H State
Sec.2, T.9S, R.17E,
Uintah County

Well No. NGC 13-16 State (P&A 7-26-85)
Sec.16, T.9S, R.19E,
Uintah County

EXPRESS MAIL ROUTING SLIP

PAM	2-18-84		12:00
TAMI	2-18-84		2:10
VICKY			3:05
CLAUDIA			3:09
STEPHANE	2-18		3:20
CHARLES	CP	2-18	3:24
RULA	RM	2-18	3:42
MARY ALICE	MAP	2-19	10:20
CONNIE	CD	2-19	10:40
MILLIE	MS	—	3:24