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COLO. OIL & GAS CONS. COMM.

SOHIO PETROLEUM COMPANY

UPRR AMOCO #7-6

SE NW SEC. 7, T3S, R64W

ADAMS COUNTY, COLORADO

6

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LOG ANALYSIS

SAMPLE/GAS LOG

DVR	
FJP	✓
HHM	✓
JAM	✓
JJD	✓
RLS	
CGM	

T. M. McCoy

Consulting Geologist

6395 Gunpark Drive - Penthouse

Boulder, Colorado 80301

#

WELL DATA

OPERATOR: Sohio Petroleum Company

WELL NAME: U. P. R. R. Amoco #7-6

LOCATION: C SE NW Sec.7, T3S, R64W
Adams County, Colorado

ELEVATIONS: 5442' GL, 5450' KB

FIELD: South Bear Creek

ROAD DIRECTIONS: I-70 to Watkins Exit; 0.3 mile N to
Colo. Highway 36; 1.1 miles E to Adams
County Rd. 25N; 3.5 miles N to lease
road; 0.5 mile W, 0.5 mile N, and 0.2
mile W to location.

SURFACE CASING: 6 jts. 8 5/8", 24# set at 240' KB;
cemented with 250 sx, 2.4% CaCl₂.

SPUD DATE: October 1, 1980 1:00 p. m.

DRILLING COMPLETED: October 14, 1980 2:00 p. m.

TOTAL DEPTH: 8239' Driller, 8236' Schlumberger

LAST FORMATION
PENETRATED: Skull Creek Shale

OPERATOR REPRESENTATIVE: Sam Gary, Jr.

SERVICES

CONTRACTOR: Allison Brothers Drilling
Rig 1: Ideco 1000
Toolpusher: Vince Urich

MUD: Plains Mud

MUD LOGGING: Martin Exploration Mgt. Corp.
Unmanned, Unit #2

WELLSITE GEOLOGIST: T. M. McCoy

CORES: None

DRILL STEM TESTS: None

LOGS: Schlumberger Well Services
Ed Keil - Engineer
Induction-SFL 242-8230'
FDC-CNL-GR 4900-5500'
7100-8234'
GR-Caliper
only 0-1750'
Continuous Dipmeter 7700-8234'

DAILY REPORTS

This summary of drilling operations was prepared from the rig tour sheets. Depths are at start of morning tour.

Day	Date	Depth	
1	10-01	0'	Rig up. Spud 1:00 p. m. Drill 12 1/4" surface hole. Ran 6 jts. 8 5/8"; 24# surface casing set at 240' KB; cemented with 250 sx cement, 2.4% CaCl ₂ . Plug down 5:30 p. m. Wait on cement (6 1/2 hrs.).
2	10-02	252'	Wait on cement and nipple up (3 hrs.). Drill. Jet (1/2 hr.). Drill. Survey and service rig (1/2 hr.). Drill. Survey and jet (1/2 hr.). Drill. Jet, survey, and service rig (1/2 hr.). Trip for bit #2 (1 3/4 hr.). Drill. Survey.
3	10-03	2412'	Service rig (1/4 hr.). Drill. Survey and jet (3/4 hr.). Drill. Service rig (1/2 hr.). Drill. Survey (1/4 hr.). Drill. Service rig (1/4 hr.). Drill, jet, survey.
4	10-04	3947'	Drill. Jet (1/4 hr.). Drill and jet. Replace bolts and dowels in main sprocket and service rig (1 hr.). Drill. Survey (1/4 hr.). Trip out for bit #4 and weld stand pipe (2 hr.). Cut drilling line (1 hr.). Trip in hole (2 hr.). Ream and wash to bottom (1/2 hr.). Drill.
5	10-05	4922'	Drill. Repair gear on pump motor; pull 15 stands; wait on part (18 hrs.).
6	10-06	5216'	Wait on pump parts (2 hrs.). Repair pump (4 1/4 hrs.). Go in hole; wash and ream 160' to bottom (1 3/4 hrs.). Jet (1/4 hr.). Drill.
7	10-07	5765'	Drill. Trip for bit #5 (5 1/4 hrs.). Survey (1/4 hr.). Work on pump motor (1 hr.). Drill.
8	10-08	6175'	Drill. Work on standpipe (3 1/2 hrs.). Drill.
9	10-09	6740'	Drill. Trip for bit #6 (5 3/4 hrs.). Survey (1/4 hr.). Ream (1 1/2 hr.) 120'.
10	10-10	7203'	Drill.

DAILY REPORTS (Cont'd)

Day	Date	Depth	
11	10-11	7655'	Drill. Survey (1/4 hr.). Trip for bit #7 and strap out (6 3/4 hrs.). Ream to bottom (1 1/4 hrs.). Drill.
12	10-12	7855'	Drill. Trip out for bit #8 (3 hrs.). Cut drilling line (1 hr.). Trip in (3 hrs.). Ream to bottom (1 1/4 hrs.). Drill.
13	10-13	8076'	Drill.
14	10-14	8178'	Drill. Short trip (3/4 hr.). Circulate for logs (1 1/4 hr.). Trip for logs and strap out (3 1/2 hrs.). Log (3 1/2 hrs.).
15	10-15	8239' T. D.	Log (7 hrs.). Total logging time 10 1/2 hrs. to run IES, FDC-CNL, Stratigraphic Dip Meter. Wait on orders (2 1/2 hrs.). Circulate for casing (1 hr.). Lay down pipe and prepare to run 4 1/2" casing.

MUD RECORD

Drilled with water/native mud to about 7000', then ran fresh gel mud to T. D.

Day	Date	Depth	Weight	Viscosity	pH	Filtrate	Daily Cost	Cumulative
10	10-10	7390'	9.6	40	8.5	8.2	----	----
11	10-11	7740'	9.7	52	9.0	7.4	----	----
12	10-12	8000'	9.8	50	9.0	7.5	----	----
13	10-13	8102'	9.8	71	9.0	7.6	----	----
14	10-14	8208'	9.8	73	9.5	8.0	----	----
14	10-14	8236'	9.6	126	---	---	----	\$4560.10

BIT RECORD

Bit No.	Size	Make	Type	Depth Out	Footage	Hours	Remarks
1	7 7/8	Sec	S3J	1785'	1533'	11 1/2	
2	7 7/8	Sec	S3	3259'	1474'	14 1/2	
3	7 7/8	Smith	DTJ	4662'	1403'	19 1/4	
4	7 7/8	HTC	J-2	5997'	1335'	35 3/4	
5	7 7/8	Smith	FDT	7073'	1076'	37	
6	7 7/8	Smith	FDT	7760'	687'	38	
7	7 7/8	HTC	J-2	8050'	290'	17 1/4	
8	7 7/8	Sec	S86F	8239'	189'	42 1/4	T. D.

DEVIATIONS

Depth	Degree
252'	1/4
847'	1/2
1348'	1/4
1785'	3/4
2287'	3/4
2787'	1/4
3259'	3/4
3789'	1
4662'	1
5997'	1 1/4
7073'	1 3/4
7764'	1 1/2

Depth

DRILLING CURVE

0'

1000'

2000'

3000'

4000'

5000'

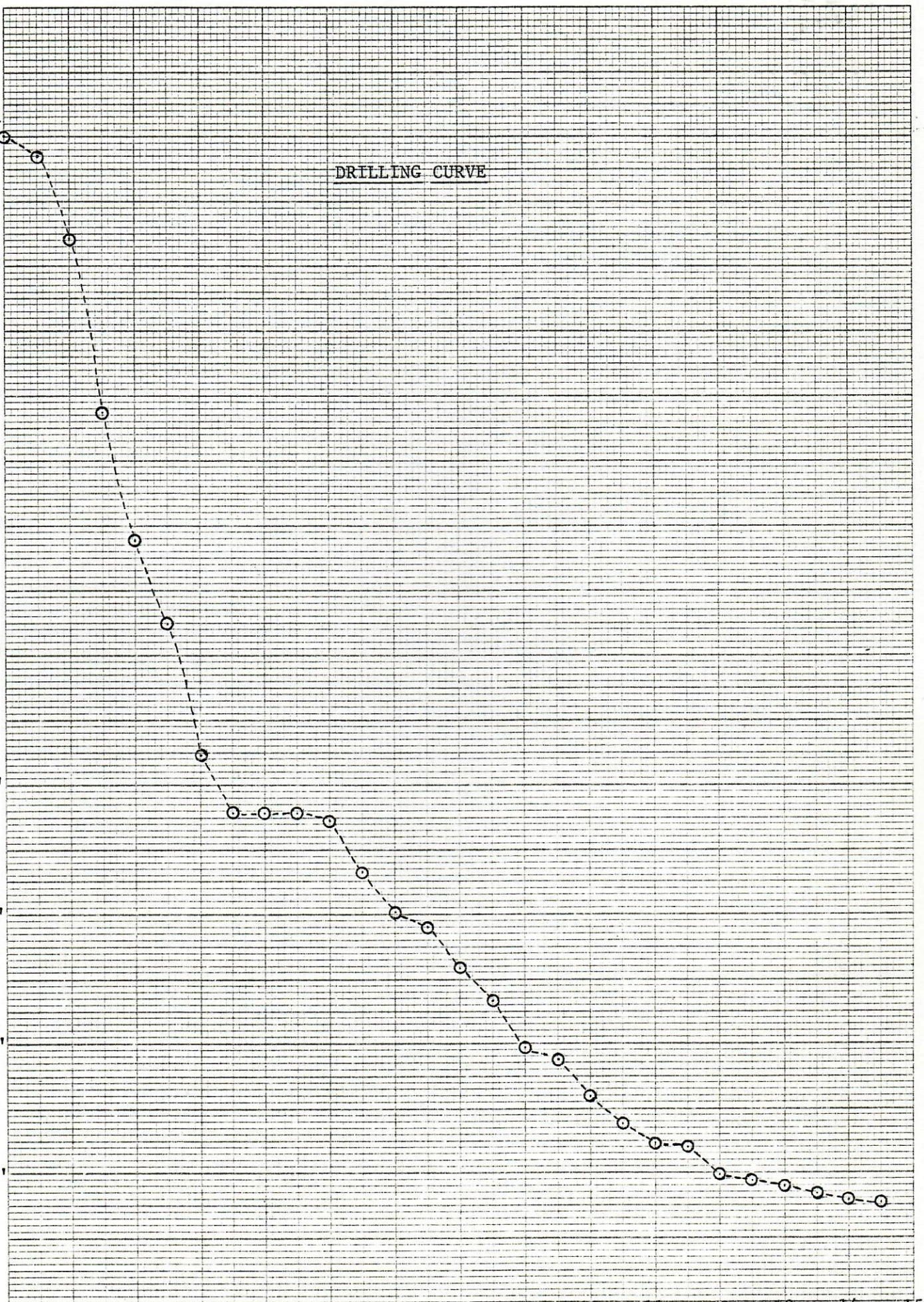
6000'

7000'

8000'

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

20 Squares to the Inch



FORMATION TOPS

Formation	Sample Top	Log Top	Datum (MSL)
Fox Hills Sandstone (Aquifer)	----	1560'	+3890'
Base Fox Hills Sandstone	----	1666'	+3784'
Sussex Sandstone	5128'	5041'	+409'
Base Sussex Sandstone	5304'	5307'	+143'
Niobrara Formation (Upper)	7333'	7336'	-1886'
Niobrara Formation (Lower)	7596'	7600'	-2150'
Fort Hays (Timpas) Limestone	7647'	7649'	-2199'
Carlile Shale	7675'	7678'	-2228'
Greenhorn Formation	7754'	7744'	-2294'
"X" Bentonite (Graneros Formation)	----	7956'	-2506'
"D" Sandstone	8046'	8046'	-2596'
Huntsman Shale	8074'	8079'	-2629'
"J" Silt	8100'	8098'	-2648'
"J" Sandstone	8112'	8113'	-2663'
Skull Creek Shale	8165'	8152'	-2702'
T. D.	8239'	8236'	-2786'

SUMMARY OF SHOWS

SUSSEX SANDSTONE

Top: 5041' Datum: +409'

No shows.

NIOBRARA FORMATION (UPPER)

Top: 7336' Datum: -1886'

Lithology: Marlstone, light to medium brownish gray, mottled; minute black flecks also common; soft to firm; HCl insoluble residue consists of brown, bubbly film and very soft argillaceous flakes; mottling and micro-nodular texture is due to light tan "ovoids" (forams?) which occur as patches flattened parallel to lamination; grades to shale, medium to dark brownish gray; soft to firm; highly calcareous due to light tan, discrete specks as well as dispersed, invisible lime content; generally platy to blocky, none splintery.

Show: None.

Hot-wire Gas: From a background of about 50 units, hot-wire gas increased to 150 to 270 units, with the higher readings corresponding well with the log intervals of SP development and higher resistivity.

AND

NIOBRARA FORMATION (LOWER)

Top: 7600' Datum: -2150'

Lithology: Shale, medium light gray, sparsely black flecked; firm to medium hard; highly calcareous; HCl insoluble residue is mainly argillaceous "powder" rather than "flakes" and has very little of the brown, bubbly film so evident in the upper Niobrara; grades to some impure limestone; dense; no visible permeability or porosity.

Show: Trace. Nearly all chips had very dull, faint, solid yellow fluorescence; fair cuts were rather slow, only very faintly streaming in part, and of modest strength.

SUMMARY OF SHOWS (Cont'd)

NIOBRARA FORMATION
(LOWER) Cont'd

Hot-wire Gas: Readings decreased from the higher levels of the upper Niobrara and remained at about 80 units through the lower Niobrara.

Remarks: The fluorescence observed in this interval may be related to the fault which cut out approximately 50' of section between the base of the upper Niobrara and the top of the Fort Hays Limestone. A similar show was not observed in Sohio's nearby UPRR Amoco #1-13, SW SW Section 1, T3S, R65W.

FORT HAYS (TIMPAS)
LIMESTONE

Top: 7649' Datum: -2199'

Lithology: Limestone, sublithographic; slightly pinkish white to very light gray; firm to some medium hard; very clean, virtually no HCl insoluble residue; spheroidal microfossils common, some small fossil fragments; micro-fractures are common, but appear to be result of drilling: look fresh, no healing or fill along fractures.

Show: Fair to good. Many chips had good, medium bright bluish yellow (giving slightly green cast), solid fluorescence. Fair cuts were quite rapid, of medium strength, and streamed faintly from some chips; the cuts were milky blue and formed the usual bluish yellow evaporative rings at the top of the spot plate.

Hot-wire Gas: Gas levels varied from 35 to 80 units through the zone and decreased to 20 to 40 units in the subjacent shale.

CARLILE SHALE

Top: 7678' Datum: -2228'

No shows.

SUMMARY OF SHOWS (Cont'd)

GREENHORN FORMATION Top: 7744' Datum: -2294'

No significant shows.

GRANEROS FORMATION Top: 7956' Datum: -2506'

No shows.

"D" SANDSTONE Top: 8046' Datum: -2596'

Lithology: Sandstone, very fine grained; at top most is white, little is light brownish gray; toward base much more is brownish gray; medium hard to hard (grains nearly fused, with possible "across-grains" fracturing); nearly all is siliceous, trace is slightly effervescent in HCl; well sorted; slight to poor porosity; virtually no peppering or other accessories at top; minor clay fill at top, increase in brownish gray clay fill and shale laminae toward base.

Show: Fair. One cluster in four at top to one cluster in ten at base had very dull yellow, solid fluorescence. (Fluorescence faded completely within 2 days at room temperature.) Most chips gave rapid, slightly streaming medium strength, milky blue cuts with bluish yellow evaporative rings at top of spot plate.

Hot-wire Gas: Gas from the top four feet of the "D" Sandstone was not circulated out prior to the trip for bit. Trip gas peaked at 150 units. A maximum of 100 units was recorded at the top of the "D", decreasing to 20 units at the base.

HUNTSMAN SHALE Top: 8079' Datum: -2629'

No shows.

SUMMARY OF SHOWS (Cont'd)

"J" SILT Top: 8098' Datum: -2648'

No shows.

"J" SANDSTONE Top: 8113' Datum: -2663'

Lithology: Sandstone, upper very fine grained; white; medium to very hard; non- to very slightly effervescent in HCl; well sorted; poor porosity due to abundant white clay fill and/or very tight packing of sub-angular grains; occasional clasts of medium brownish gray clay, especially below main sand body; moderately peppered.

Show: Fair to good. One cluster in two had quite bright, solid yellowish blue fluorescence. Cuts were of medium strength, rapid, streamed from some chips and left bright fluorescent rings at top of spot plate upon evaporation .

Hot-wire Gas: Virtually no gas increase was recorded; gas levels varied from 10 to 25 units above, through, and below the main sand body.

SKULL CREEK SHALE Top: 8152' Datum: -2702'

No shows.