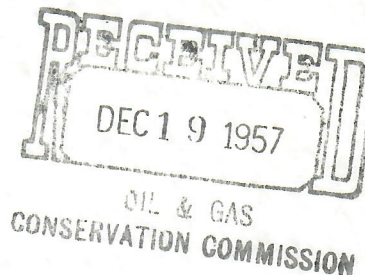


HANKS, KELSO, & INLAND DRILLING,  
No. 1 State



02496730



ELEVATION: 4167 Gr.  
4175 KB

COMMENCED: December 1, 1957

COMPLETED: December 8, 1957

CASING: 8-5/8" @ 154' w/100 sz. (2% CaCl<sub>2</sub>)

CONES: Core No. 1 4413-4438 - Recovered 25' (See Core Description)  
Core No. 2 4497-4524 - Recovered 27' (See Core Description)

TESTS: None

TOPS:	SAMPLE	SCHLIMBERGER
Niobrara	3575	3564 ( 611)
Ft. Hays	3920	3918 ( 257)
Codell	3950	3943 ( 232)
Carlile	3960	3948 ( 227)
Greenhorn	4145	4140 ( 35)
Bentonite	4310	4300 (-125)
'D' Sand	4400	4390 (-215)
'J' Sand	4493	4497 (-322)
Skull Creek	4650	4641 (-466)
Total Depth	4660 Irir.	4655 (-480)

BIT RECORD:

Run No. 1	7-7/8"	HIC	OSC-3	154-3864'	3710'	40 1/2 hrs.
Run No. 2	"	"	"	3864-4413'	549'	20 hrs.
Run No. 3	"	"	OSC-10	4438-4497'	59'	7
Run No. 4	"	"	" (RR)	4524-4586'	62'	7
Run No. 5	"	CP	RAV	4586-4655'	69'	7

DEVIATION SURVEY:

3864'	1/4 degree
4413'	1/2
4502'	1/2
4586'	3/4

DRILLING TIME RECORD:

Two copies of the Geolograph record have been retained and are on file.

SAMPLE RECORD:

Drilling and coring samples have been turned over to the American Stratigraphic Laboratory, 1820 Broadway, Denver 2, Colorado, and are retained there on file.

HAWKS, KILBO, & INLAND DRILLING,  
No. 1 State

SAMPLE DESCRIPTION:

- 3500-20 Shale blk-gry soft waxy w/few qtz pebbles, pyr replacement of foss plant stem frags.
- 3520-40 Shale blk-gry soft waxy w/qty as above.
- 3540-50 Shale gry-blk soft bent w/pk and clear qtz frags.
- 3550-64 Shale blk soft waxy w/surf cave as above.

Top Niob - 3564'

- 3564-3600 Shale gry-brn w/large wh calc sptg.
- 3600-20 Shale gry-brn w/few pieces brn arag and some wh bent.
- 3620-40 Niob sh as described above.
- 3640-80 As above.
- 3680-3700 Shale gry-brn w/many wh calc spots and lam, more gry and calc than above w/many pk-org qtz frags.
- 3700-20 Shale gry soft w/many wh calc spots, incr in size of spots from that of above.
- 3720-40 Shale gry as above.
- 3740-60 Shale tan-brn very calc - Niob.
- 3760-3800 As above.
- 3800-40 Shale tan-brn w/many large wh calc spots pk-org chert frags.
- 3840-60 Shale tan-brn very calc w/qty pebble surf cave.
- 3860-3900 Niob as above.
- 3900-18 Shale tan-gry calc sptg w/few tan arag xtls.

Top Ft.H - 3918'

- 3918-43 Limestone wh hd w/lot Niob cave few clear qtz frags.

Top Cod - 3943'

- 3943-48 Sandstone gry vfg silty "dirty" appearance w/glauc Niob & Ft.H cave few clear frags.

Top Carl - 3948'



HANKS, KELSO, & INLAND DRILLING,  
No. 1 State

SAMPLE DESCRIPTION (Cont'd):

3948-4000 Shale gry soft waxy bent.  
4000-30 Shale gry soft as above w/lot of pk-org qtz cave - Rich & Ft. H.  
4030-70 Shale as above.  
4070-4100 Shale gry soft waxy w/qtz cave.  
4100-40 Shale as above

Top Gahn - 4140'

4140-80 Limestone gry hd sandy w/few pieces grn-grn cryptotln ls glassy,  
Rich & Ft.H cave  
4180-4200 Shale gry-blk soft bent w/tr pyr & few xtls tan arag.  
4200-50 Shale as above.  
4250-80 Shale blk soft very bent w/few wh calc xtls.  
4280-4300 As above.

Top Bent - 4300'

4300-12 Shale blk soft bent w/few tan arag xtls no change noted in bent  
content.  
4312-60 Shale blk soft bent tr pyr.  
4360-90 Shale blk soft bent w/gry hd dse sltstn.

Top 'D' - 4390'

4390-97 Siltstone gry vfg hlt very poor ptp no stn or fluor.  
4397 CIRCULATION SAMPLE - 1 Hour  
Sand gry vfg hlt apparent poor ptp revk "dirty" appearance,  
no stn or fluor.  
4397-4413 As above, very hlt sh.  
4413-4438 Core No. 1 - See Core Description  
4438-97 Shale blk soft bent w/gry hd dse sltstn w/sd cave from above,  
sh in sd clusters.

Top 'J' - 4497'

4497-4524 Core No. 2 - See Core Description

HAWKS, KELSO, & INLAND DRILLING,  
No. 1 State

SAMPLE DESCRIPTION (Cont'd):

- 4524-50 Sand wh vfg loose fria clusters subangular grns well sorted  
w/some clusters & small specks of biotite, no stn or fluor  
w/ether cut.
- 4550-90 Sand wh fg loose fria clusters apparent good p&p "water" sd,  
no stn or fluor.
- 4590-4641 Sand as above NS or fluor w/ether cut.

Top ShCh - 4641'

- 4641-55 Shale blk hd splintery.
- 4655 Total Depth - Schlumberger

CORE DESCRIPTION:

Core No. 1 4413-4438 ('D' Sand) Recovered 26':

- 19' Alternating gry sd & blk sh lam, sd gry vfg h&t d&c apparent  
poor p&p, no stn, odor or fluor.
- 4' Shale blk hd fiss.
- 2' Alternating gry sd & blk sh lam, sd gry vfg h&t apparent  
poor p&p, NS.

Core No. 2 4497-4524 ('J' Sand) Recovered 27':

- 14' Alternating gry sd & blk sh lam, sd gry vfg h&t d&c poor p&p,  
vet, no stn, odor or fluor.
- 1' Shale blk hd fiss.
- 3' Sand gry vfg revk cl-f 'dirty' appearance apparent poor p&p,  
vet NS.
- 5' Shale blk hd highly frac bent.
- 4' Alternating gry sd & blk sh lam, sd gry vfg tite cl-f, no  
stn, odor or fluor.

*Frederick M. Upham*  
Frederick M. Upham  
*But*

FMB:bw