



02358750

OPERATOR: United States Smelting Refining and Mining Company

WELL: Colorado State 1577 No. 1-2

LOCATION: C NE NE Sec. 2
Township 10 North, Range 53 West
Logan County, Colorado

ELEVATION: 4374 GL
4382 KB

COMMENCED January 7, 1969 - 4:30 P.M.

SET SURFACE: January 7, 1969 - 7:30 P.M.

FROM UNDER SURFACE: January 8, 1969 - 7:30 A.M.

REACHED TOTAL DEPTH: January 12, 1969 - 7:30 P.M.

COMPLETED: January 13, 1969

STATUS: Plugged and Abandoned January 13, 1969

GEOLOGIST: M. C. Johnson

CASING: Surface: 8 5/8" Casing set at 127' w/120 sacks
cement + 3% CaCl.

CONTRACTOR: Exeter Drilling Company
Bill Brown, Pusher

RIG EQUIPMENT: Draw Works - Bethlehem
Derrick - L. C. Moore - 92'
Pump - Bethlehem G-225 - 14"

RECEIVED

JAN 27 1969

COLO. OIL & GAS CONS. COMM.

was compl.



FORMATION TOPS
(From Electric Logs)

NIOBRARA	4235
CARLILE	4595
GREENHORN	4872
BENTONITE	4938
"D" SAND	5033
"J" SAND	5169
SKULL CREEK	5285
"O" SAND	5412
TOTAL DEPTH	5440' Driller 5444' Schlumberger

ELECTRIC LOGS

Schlumberger: Induction Electric Log: 127' to 5444'

Compensated Gamma-Ray-Density-
Caliper Log: 4980' to 5444'
4770' to 4860'

Gamma-Ray - 400' to surface

Plugs: 15 sxs cement @ base surface casing (127')

10 sxs cement in top surface casing.

SAMPLE DESCRIPTION

- 5000 - 5010' Shale, very dark to gray, sub-fissile to blocky, slight calcareous, trace aragonite crystalline, trace pyrite.
- 5010 - 5020' Shale as above, trace siltstone, light gray, very firm, tite.
- 5020 - 5030' Shale as above, with very weak trace siltstone, weak trace bentonite, white. Trace aragonite crystalline, trace pyrite.
- 5030 - 5040' Shale, light to very dark gray, black, sub-fissile to blocky, slightly calcareous, trace aragonite crystalline, occasional trace pyrite, very weak trace siltstone, light gray, very firm, tite.
- 5040 - 5050' Shale as above, with sandstone, very light gray, white, very light tan to white, very fine grained, firm to friable, with very poor to fair porosity and permeability, brite yellow fluor, blue yellow fluor, fair cut with CCl₄.
- 5050 - 5060' Siltstone, sandstone, white, very light gray, very weak tan to white, very fine to fine grained, sub-rounded to rounded, clear frosted with occasional light orange to green, very firm to friable, appears to have some kaolinitic and clay fill, weak trace, very poor to poor p&p, scattered patchy fluor, fair trace shale as above.
- 5060 - 5070' Siltstone, sandstone, white, very light gray, weak tan to white, very fine to fine grained, very firm to friable with scattered carbonaceous flecks, trace very light tan carbonaceous stain, trace kaolinitic matrix, rare piece, has brite blue/yellow fluor, very poor to poor p&p, pieces with fluor, have fair p&p, good trace white, very light tan to white bentonite.
- 5070 - 5080' Shale, very dark gray, black, fissile to sub-blocky, firm, siltstone, sandstone, white, very light gray, very light tan to gray, white, very fine to fine grained, sub-angular to rounded, poorly sorted with very firm to friable streaks. Very poor to fair p&p, very rare piece with fluor, weak cut with CCl₄.
- 5081 - C0 Shale as above with weak trace siltstone, sandstone, light gray to white, very fine grained, very firm to friable, no fluor, trace very poor to good p&p, trace white bentonite.
- 5081 - 5090' Shale as above, with weak trace siltstone, sandstone, trip samples.
- 5090 - 5100' Shale, gray to very dark gray, trace black, very firm, fissile to sub-blocky, fair trace white bentonite, weak trace siltstone, sandstone, white, very light gray, very fine grained, very firm to friable, very poor to poor p&p, one or two pieces fluor, with weak CCl₄ cut.
- 5100 - 5110' Shale as above, with trace sandstone, white, very fine to fine grained, sub-angular to rounded, clear frosted quartz grains, friable, with poor to fair p&p, no fluor, no cut. Trace tan, white bentonite, trace tan argillaceous dolomite.
- 5110 - 5120' Shale, with trace sandstone as above, trace bentonite.
- 5120 - 5130' Shale, light to dark gray, trace black, fissile to blocky, firm, trace tan, dense argillaceous dolomite, fair trace siltstone, sandstone, very fine grained, very pyritic, fair trace pyrite, trace siltstone, sandstone, light gray, very fine grained, tite.
- 5130 - 5150' Shale, light to very dark gray, sub-fissile, fissile to blocky, firm, with very weak trace siltstone, sandstone, white, very fine grained, firm, tite, trace brown to tan dense argillaceous dolomite, trace pyrite, pyritized micro fossiliferous fecal pellets.
- 5150 - 5160' Shale as above, siltstone, sandstone, gray, tan to gray, very fine grained, argillaceous, very dense, tite, trace mica glauconite sand-

- 5150 - 5160' stone, white, very light gray, S&P, very fine grained, clean to bentonite, very firm to friable, fair sorting, with none to poor p&p, 1 piece has fluor and cut.
- 5160 - 5170' Shale, gray, brown to gray, very firm, blocky with silty and sandy streaks dull brown fluor, no cut, with trace interbedded sandstone, light brown, very fine grained, very argillaceous, dense and tite, trace gray, S&P, very fine grained sandstone, no fluor, no cut with CCl_4 .
- 5170 - 5180' Sandstone, white, very light gray, very fine to fine to medium to fine grained, sub-angular to well rounded, clear and frosted quartz grains, poorly sorted, kaolinitic matrix, very firm to friable, very poor to poor porosity, very poor permeability, brite yellow fluor, weak cut with interbedded shale, siltstone, sandstone, gray to brown, to gray, fine grained, very argillaceous, firm to tite, no fluor, no cut.
- 5180 - 5190' Sandstone, white, buff to white, very fine to fine grained, angular to sub-angular to sub-rounded, clear frosted quartz grains, with scattered gray chert grains, occasional mica flake, trace carbonaceous flecks, kaolinitic matrix, poor to fair sorting, very poor porosity and none to very poor permeability, good, very brite yellow fluor, very weak cut, with CCl_4 , wet, good cut dry samples with CCl_4 , trace interbedded, gray to brown to gray argillaceous very fine grained sandstone, trace shale, gray, brown to gray, firm blocky, carbonaceous, trace white kaolinitic streaks. Fluor in sandstone may be partially mineral fluor in bentonite.
- 5190 - 5200' Shale, gray to dark gray, black, fissile to blocky, fir, poor trace sandstone as above.
- 5200 - 5207' Shale, gray, brown to gray, dark gray, fissile to blocky, firm with carbonaceous streaks.
- 5207 - 5210' Trip sample, shale as above with considerable cavings, light orange, bentonite, shale.
- 5210 - 5240' Shale, gray, slightly green to gray, brown to gray, sub-fissile to blocky, slightly carbonaceous, with trace carbonaceous and mica flecks. Weak trace sandstone, white, very fine grained, fair trace cavings, trace dolomite, gray to tan, argillaceous, dense, with very sandy streaks.
- 5240 - 5270' Shale as above, with trace interbedded sandstone, very light gray, S&P, very fine to fine grained, kaolinitic, firm, tite, no porosity, no fluor, fair trace dolomite, cream to tan to gray to tan, dense, argillaceous, with sandy streaks, weak trace pyrite.
- 5270 - 5300' Shale, gray, very dark gray, slightly green to gray, sub-fissile, fissile, blocky, very firm, with rare silty streaks, rare occasional trace sandstone, white, fine grained, friable, no shows, trace pyrite.
- 5300 - 5330' Shale, gray, very dark gray, black, firm, sub-fissile, fissile to blocky, splintery, trace pyrite.
- 5330 - 5340' Shale as above, with trace siltstone, sandstone, S&P, white, very light gray, very fine grained, firm, tite.
- 5340 - 5350' Same as above, very poor sample.
- 5350 - 5395' Shale, gray, very dark gray, black, fissile to splintery, firm, considerable cavings.
- 5395 - 5400' Shale, as above, with trace siltstone, sandstone, light gray, very fine grained, very firm, tite, with calcite, filled frac, no poros. No fluor. Trace shale, very dark gray, silty, and sandy, one piece siltstone, bleeding gas.

Sample Description (Cont'd)

- 3 -

- 5400 - 5405' Shale as above, with weak trace sandstone, white, fine grained, friable, no fluor, no show.
- 5405 - 5410' Shale, as above, with trace sandstone, very light gray, very light tan to gray, medium grained, sub-angular to rounded, clear frosted quartz, clean, tight, firm, quartzitic, to friable, with very poor p&p, appears to have dead oil stain, no fluor, no cut.
- 5410 - 5420' Shale as above, poor sample.
- 5420 - 5425' Shale as above, with rare trace sandstone, very light gray, white, medium grained, friable to firm, none to good poros. No fluor, trace free very dark brown oil on sand, gilsonitic specks, trace pyrite, samples have dull golden yellow fluor when dry. Oil is low viscosity, tarry. Good cut with CCl_4 .
- 5425 - 5430' Sandstone, light gray, very fine to fine to medium grained, sub-angular to well rounded, very friable, good p&p, bleeding dark brown oil, trace gilsonite specks, no fluor, on wet sample good golden yellow fluor, dry.
- 5430 - 5435' Shale as above, with fair trace sandstone, light gray, very fine to fine to medium grained, angular to sub-angular, clean, friable, bleeding brown oil and with gilsonite specks.
- 5435 - 5440' Shale, gray, very dark gray, sub-fissile to fissile, firm, trace sandstone, light gray, fine to medium to fine grained, bleeding brown oil, good p&p, weak tract siltstone, sandstone, light gray, very fine to fine grained, firm, tite, trace dolomite, tan, white and tan, crypto crystalline, trace white gypsum.
- 5440 - CO Shale as above, with trace dolomite and gypsum, very weak trace sandstone, light gray, fine to medium to fine grained, very friable, with gilsonite flecks, bleeding brown oil.

TD 5440 ' Driller
5444 ' Schlumberger

ELECTRIC LOG CALCULATIONS

	<u>Depth</u>	<u>Porosity</u>	<u>SW</u>	
<u>"O" Sand</u>	5418-21	19%	47%	Rw = .3
	5421-23	12%		
	5423-28	21%	60%	
	5428-30	18%	75%	
	5430-32	21%	80%	
<u>"J" Sand</u>	5170-74	6%	<u>Tight</u>	Rw = .23
	5178-82	6%	<u>Tight</u>	
	5195-98	11-13%	100%	
	5204-07	16%	100%	
	5207-11	7%	Tight	
	5229-33	7-8%	Tight	
<u>"D" Sand</u>	5036-40	13%	100%	Rw = .23
	5040-42	10%	88%	
	5052-56	19%	66%	
	5056-60	19%	85%	
	5060-63	23%	77%	
	5063-74	19-20%	100%	
	5081-5102	19-20%	100%	

"D" Sand - 5033'

"J" Sand - 5169'

"O" Sand - 5413'

TD - 5440 Driller
5444 Schlumberger

HOLE DEVIATION

<u>Depth</u>	<u>Deflection</u>
514'	1/4°
1028'	1/4°
1507'	1/2°
2018'	1/2°
2527'	3/4°
3029'	3/4°
3416'	1/4°
3926'	1/2°
4503'	1/2°
4804	1°
5207'	1/4°

CORES: None

DRILL STEM TESTS: DST #1 5413 to 5423 - Virges Testers
TO 10" ISI 45" TO 2 hrs FSI 60"

Very weak throughout.

Recovered 1550' fluid
10' black tarry oil
1540' HGC sli/MW

FP 88-699
HP 2961-2950
SIP 1153-1067
Temp 186°F



00266848

BIT RECORD

<u>Bit No.</u>	<u>Make</u>	<u>Size</u>	<u>Type</u>	<u>Depth Out</u>	<u>Footage</u>	<u>Hours</u>
1	Sec.	7 7/8	S3	3416'	3289'	18 1/2
2	Smith	"	DT	4804'	1388'	19 1/2
3	Smith	"	DT	5081'	277'	9 1/4
4	Reed	"	YS1	5207'	126'	14 1/2
5	Smith	"	V1	5279'	72'	11 1/2
6	HTC	"	OWV	5346'	67'	2 1/2
7	HTC	"	OSC	5440'	94'	4

Drilling time: One (1) foot maintained by Star Recorder.