

JUN 3 1954

GOFF-ARNOLD NO. 1 WELL

By Nolle Oil and Gas Corp., 210 E. Parkway, Pittsburgh, Pa.
 Roaring Creek District, Randolph County, W. Va.
 Located 3.98 Mi. S. of Lat 38° 55' and 2.49 Mi. W. of Long. 80° 00'.
 Sage Quadrangle. -EC
 Elevation 2751 VA.
 Permit Ran-4.

Drilling commenced Jan. 25, 1952; completed March 12, 1952.
 Water 70' 4 BPH; Salt water at 645' 1/2 BPH; Gas 2327-2331' 50/10 in 2";
 Gas 2331-2338' 94/10 in 2 1/2"

Open Flow 78/10ths Water in 2 1/2"
 Volume 432,747 Cu. Ft. Rock Pressure 500# 13 Hrs. Coal at 77'-36" thick
 13" casing to 65'; 10" to 397' 3"; 8-1/4 to 1187' 2"; 6-5/8" to 2398' 2".
 The majority of the samples from this cable tool drilled well were taken
 at 10' intervals. Section based on samples from 0-2388'; Examined
 Russell R. Flowers.

Top	Bottom	Thickness	
0	77	77	Sandstone, very light to light gray, fine to coarse grained, subrounded, some granules; some medium to medium dark siltstone; some dark to dark yellowish brown, silty and shaly siderite
77	80	3	Coal
80	134	54	Sandstone, very light to light gray, fine to very coarse grained, subrounded; some medium dark gray siltstone, sideritic in part with siderite nodules
134	152	18	Sandstone, brownish gray, very fine to fine grained, very silty, somewhat carbonaceous, somewhat micaceous; some black, very highly carbonaceous shale
152	198	46	Sandstone, light gray, fine to medium grained, subrounded, contains a little muscovite and black shale and trace of chlorite; some grayish black, silty, carbonaceous shale at the bottom
198	224	26	Sandstone, very light to light gray, medium to very coarse grained, subrounded, some carbonaceous streaks; some of the siderite shows crystal facets
224	231	7	Siltstone to shale, dark gray to grayish black, somewhat carbonaceous and micaceous, somewhat sideritic with siderite nodules
231	247	16	Sandstone, light to medium light gray, very fine to fine grained, subangular, some medium grained, some grains show secondary crystal facets, contains mica and carbonaceous material, trace of chlorite; moderate amount of medium dark gray chlorite-shale
247	277	30	Sandstone, very light gray, fine grained to coarse grained, subangular to subrounded, much of the sand shows secondary crystal facets, mostly fine to medium grained in the lower part
277	306	29	Siltstone to shale, dark gray to grayish black; sandstone light to medium gray (argillaceous), very fine to medium grained
306	320	14	Shale and siltstone, dark gray; trace of siderite

320	328	8	Sandstone light gray to light brownish gray; very fine grained siderite in part, contains carbonaceous streak; some black highly carbonaceous, pyritic shale at the bottom
328	347	19	Shale and siltstone, dark gray to grayish black, micaceous; sandstone, light gray to light brownish gray, very fine grained, some medium to coarse grains, sideritic in part
347	361	14	Shale, grayish black, carbonaceous, highly carbonaceous and micaceous at the top; small amount of black highly carbonaceous shale; small amount of shaly dusky, yellowish brown siderite
361	376	15	Fireclay, olive gray, somewhat micaceous, sideritic in part; a very large amount of grayish black, carbonaceous shale; small amount of siderite
376	391	15	Siltstone, medium dark to dark gray and brownish black, carbonaceous; shale, dark gray and grayish black to black (carbonaceous)
391	440	49	Shale grayish black to black (highly carbonaceous), medium dark to dark gray; moderate amount of olive gray fireclay; siltstone to sandstone, dark gray to brownish gray, sideritic; small amount of siderite
440	472	28 ²²	Sandstone, light gray, fine grained; a very large amount of dark gray siltstone in the lower part; small amount of siderite
472	512	40	Shale, dark gray, silty in the lower part; small amount of dusky yellowish brown, shaly siderite
512	532	20	Coal (small amount); shale, grayish black, carbonaceous; a large amount of fireclay
532	560	28	Siltstone, dark gray to grayish black, carbonaceous, micaceous
560	585	25	Shale, dark gray to grayish black (carbonaceous), some black (highly carbonaceous); a large amount of dark gray fireclay
585	625	40	Shale, grayish black, some grayish black to black, very silty in part; siltstone brownish gray, somewhat carbonaceous; small amount of medium gray to olive gray, sideritic fireclay
625	635	10	Shale, grayish black, carbonaceous, silty; small amount of dusky gray yellowish brown siderite
635	672	37	Sandstone, light gray, fine grained, subrounded, some medium to coarse grains at the bottom, contains a small amount of chlorite and muscovite and carbonaceous material
672	692	20	Sandstone, light gray, some brownish gray, fine to coarse grained, many of the grains show secondary crystal facets, sideritic in part, slightly chloritic and micaceous; some dark gray to grayish black shale
692	720	28	Shale and siltstone, dark gray to grayish black, somewhat carbonaceous, highly sideritic in part; a very small amount of coal
720	764	44	Shale, grayish black, carbonaceous; a small amount of coal in the lower part; a large amount of medium dark to dark gray fireclay at the bottom
764	814	50	Sandstone, light gray, very fine to fine grained; some medium dark to dark gray, very shaly siltstone in the upper part

814	840	26	Shale (black, very highly carbonaceous) to coal; shale, dark gray to grayish black, silty; a very large amount of olive gray, to dark gray fireclay in the lower part
840	860	20	Shale, dark gray to grayish black, silty; some grayish black to black, highly carbonaceous to coal
860	870	10	Coal to a very highly carbonaceous shale; fireclay, medium gray to olive gray, contains a little chlorite and carbonaceous material, somewhat micaceous
870	913	43	Sandstone, very light to light gray, very fine to fine with coarse to very coarse grains in the upper part, fine to very coarse in the lower part, subangular to subrounded, some of the grains show secondary crystal facets
913	920	7	Shale, dark gray (somewhat carbonaceous), some grayish black to black (highly carbonaceous); a moderate amount of fireclay (olive gray)
920	930	10	Sandstone, light gray, very fine to medium grained, subrounded to rounded; trace of calcite
<u>MAUGH CHUNK FORMATION, 510 FEET</u>			
930	950	20	Shale, dark greenish gray, silty; shale, grayish brown to dusky brown
950	985	35	Shale, very dusky red to dusky brown
985	1000	15	Siltstone, medium dark gray to dark greenish gray, very shaly, sandy in part, slightly calcareous, slightly dolomitic
1000	1027	27	Sandstone, medium light to medium gray, very fine to fine grained, somewhat dolomitic, calcareous in the lower part; a moderate amount of medium dark gray siltstone and shale; a large amount of dark greenish gray to medium dark gray shale with some limestone nodules in the lower part
1027	1050	23	Shale, grayish brown, small amount of dark greenish gray (silty), highly calcareous and somewhat dolomitic in part
1050	1060	10	Siltstone and shale, dark greenish gray, chloritic and micaceous, calcareous, dolomitic in part; a large amount of grayish brown shale
1060	1080	20	Shale, very dusky red to dusky brown; a large amount of dark greenish gray, calcareous siltstone and shale
1080	1100	20	Siltstone and shale, dark greenish gray to brownish gray, calcareous; shale, grayish red to grayish brown, calcareous in part
1100	1121	21	Shale, very dusky red to grayish brown; a moderate amount of dark greenish gray to dark gray siltstone and shale with shale and limestone nodules in the lower part
1121	1150	29	Siltstone to shale sandstone (very fine), dark greenish gray, chloritic, calcareous, with olive gray limestone nodules; some grayish brown and a little dark gray shale
1150	1190	40	Sandstone, light gray to greenish gray, very fine grained, somewhat chloritic, somewhat calcareous

- 1190 1210 20 Siltstone and shale, dark greenish gray, highly calcareous in part, sandy (very fine) in part; somewhat chloritic and micaceous; a large amount of dusky brown to very dusky red shale in the upper part
- 1210 1250 40 Shale, grayish brown to dusky red; siltstone to sandstone (very fine) dark greenish gray, chloritic and micaceous, calcareous in part, shaly
- 1250 1270 20 Siltstone to sandstone (very fine), dark greenish gray, somewhat chloritic and micaceous, shaly, slightly calcareous; shale, grayish red to grayish brown
- 1270 1300 30 ^{C/2x} Chlorite-Shale, dusky brown to very dusky red, with a few limestone nodules; some dark greenish gray shaly, siltstone to sandstone (very fine)
- 1300 1350 50 Shale, grayish red to grayish brown and dusky brown, some dark greenish gray, a moderate amount of dark greenish gray to dusky gray at the bottom
- 1350 1360 10 Limestone, dark gray to grayish black, very silty, argillaceous, fossiliferous
- 1360 1365 5 Shale, dark gray, fossiliferous
- 1365 1390 25 Limestone (very shaly) to shale (very highly calcareous), dark gray, highly fossiliferous (some crinoid stems), some of the limestone is lighter in color and less shaly in the lower part
- 1390 1400 10 Siltstone to shale (silty), dark greenish gray to medium dark gray; a moderate amount of dark gray shale, highly calcareous in part
- 1400 1430 30 Shale to ^{C/2x} chlorite-shale, grayish brown to dusky brown; some dark greenish gray to dark gray shale with limestone nodules (Pencil cave?)
- 1430 1440 10 Shale, dark gray, soft, very silty; some light gray coarse siltstone

GREENBRIER LIMESTONE, 250 FEET.

- 1440 ~~14~~ 1450 10 Limestone oolites, olive gray to brownish black, somewhat silty, slightly sandy
- 1450 1460 10 Limestone, light gray to olive gray, very silty, slightly argillaceous
- 1460 1502 ~~42~~ ~~1502~~ Limestone, olive gray, highly argillaceous, somewhat silty, fossiliferous, trace of chert; some olive gray and dark greenish gray to dark gray, very highly calcareous, fossiliferous shale from 1470-1490; some brownish black limestone (very shaly) to shale (very highly calcareous) at the bottom
- 1502 1510 8 Limestone, olive gray to dark gray and brownish black, very sandy (very fine), argillaceous
- 1510 1542 32 Limestone, light olive gray to olive gray, very highly oolitic, somewhat argillaceous; some dark greenish gray to medium dark gray, very highly calcareous shale; rare gastropod fragments
- 1542 1550 8 Limestone, brownish gray to dark brownish gray, silty with some highly calcareous siltstone; some dark greenish gray and a small amount of brownish gray to grayish brown shale
- 1550 1561 11 Sandstone, brownish gray, very fine to fine ^{grained} gray, rounded to well rounded, some medium (well rounded) grains, very highly calcareous (many of the grains are limestone)

- 1561 1580 19 Limestone, olive gray to dark greenish gray with light gray spots, argillaceous; a very large amount of shale, grayish brown to brownish gray and dark greenish gray to medium dark gray, sandy in part, calcareous
- 1580 1592 12 Limestone, olive gray, very sandy (very fine), highly argillaceous (this rock is a sandstone, composed mostly of limestone grains); a large amount of grayish brown shale, somewhat sandy, calcareous
- 1592 1610 18 Limestone, light olive gray, oolitic; a moderate amount of mottled brownish black and dark greenish gray, argillaceous siltstone, dolomitic
- 1610 1640 30 Limestone-oolite, pale yellowish brown to dark yellowish brown, very sandy (very fine grained), sandy (very fine grained to fine grained) in the upper part; some brownish black to grayish black, highly calcareous
very fine sandstone in the middle & lower parts
- 1640 1650 10 Limestone, light olive gray, somewhat dolomitic, silty somewhat sandy (very fine); small amount of brownish black, dolomitic shale
- 1650 1670 20 Limestone, dark to dusky yellowish brown, very highly argillaceous to highly calcareous shale, dolomitic silty; trace of clear dolomite
- 1670 1680 10 Limestone, dark yellowish brown; some brownish black, silty; a large amount of very fine sandstone, dark gray to brownish black (carbonaceous?); some dark greenish gray (calcareous); some dark greenish gray shale
- 1680 1691 11 Limestone, olive gray to dark yellowish brown, highly oolitic in part; a large amount of olive gray, highly dolomitic limestone; a very small amount of dark yellowish dolomite at the bottom

~~1691~~

POCONO FORMATION, 39 FEET

- 1691 1700 9 Sandstone (very fine) to siltstone, mottled greenish gray and dark gray, carbonaceous; siltstone and shale, medium dark gray to dark greenish gray
- 1700 1710 10 Sandstone (very fine) to siltstone, medium gray, some medium gray to dark greenish gray, some dark gray, small amount is dolomitic
- 1710 1720 10 Siltstone, dark greenish gray, somewhat sandy, dolomitic in part; shale medium dark to dark gray, silty in part
- 1720 1730 10 Siltstone, medium dark to dark gray, very shaly, somewhat kaolinitic; trace of galena

~~1730~~

HAMPSHIRE FORMATION, 515 FEET

- 1730 1742 12 Shale and siltstone, dark greenish gray, some greenish black, sandy (very fine) in part, small amount is highly dolomitic; a moderate amount of very dusky red to dusky brown shale
- 1742 1770 28 Sandstone (very fine) to siltstone, greenish gray to dark greenish gray, (dolomitic) in the lower part, highly argillaceous to a silty and sandy shale; small amount of red shale
- 1770 1781 11 Siltstone and shale, medium dark gray to dark gray, very sandy
- 1781 1790 9 Shale, very dusky red to grayish brown, some brownish gray and some medium dark gray siltstone, greenish gray to medium dark gray, some greenish black to dark gray; dolomitic, highly dolomitic in part (calcareous in part)

1790	1816	26-	Siltstone, greenish gray to dark greenish gray, some dark gray, highly argillaceous in part, highly dolomitic in part, chloritic and micaceous in part, somewhat kaolinitic; some very dusky red to dusky brown shaly shale
1816	1834	18	Sandstone, light to medium gray, dolomitic, contains some chlorite and some carbonaceous material, very fine grained
1834	1850	16	Sandstone (very fine grained) to siltstone, light gray to greenish gray, some dark greenish gray to medium dark gray, very shaly in part with some shale, dolomitic; moderate amount of very dusky red to dusky brown shale
1850	1910	60	Shale, very dusky red, some dusky brown, silty in part; siltstone and shale, dark greenish gray, a moderate amount in the upper part and a large amount in the lower part
1910	1930	10 ²⁰	Sandstone (very fine) to siltstone, dark greenish gray, chloritic, contains mica and kaolinitic material, somewhat dolomitic
1930	1922 1960	30	Sandstone, greenish gray to dark greenish gray, light gray to greenish gray in the lower part, very fine grained, slightly dolomitic, highly dolomitic in part, chloritic, contains mica and kaolinitic material
1960	1970	10	Siltstone, greenish gray, some medium dark gray to dark greenish gray, highly dolomitic in part, sandy in part; small amount of very dusky red to dusky brown shale
1970	1990	20	Siltstone, dark greenish gray, argillaceous in part, somewhat dolomitic; a large amount of very dusky red silty shale
1990	2000	10	Siltstone, dark greenish gray, sandy (very fine) in part, slightly calcareous, dolomitic in part, argillaceous in part; some very dusky red, silty shale
2000	2030	30	Siltstone, dark greenish gray, chloritic, contains mica and kaolinitic material; shale very dusky red to dusky, brownish gray, silty
2030	2044	14	Siltstone to sandstone (very fine), dark greenish gray, chloritic, contains mica and kaolinitic material; some brownish gray to dusky brown, silty shale
2044	2078	34	Siltstone, dark greenish gray, shaly, highly dolomitic in part; shale very dusky red to greenish brown, small amount of brownish gray to dark gray in the upper part
2078	2090	12	Sandstone (very fine) to siltstone, dark greenish gray to medium dark gray, slightly dolomitic, chloritic, micaceous and kaolinitic
2090	2104	14	Sandstone, light gray to greenish gray, some dark greenish gray to medium dark gray, dolomitic to a very sandy dolomite
2104	2130	26	Siltstone, dark greenish gray to medium dark gray, brownish gray to, dusky brown, chloritic, micaceous, contains some kaolinitic and some carbonaceous material; a moderate amount of grayish brown shale
2130	2140	10	Sandstone (very fine) to siltstone, grayish red to very dusky red, contains some mica and chlorite, and some kaolinitic material, dolomitic in part
2140	2150	10	Siltstone to shale, brownish gray to very dusky red, micaceous

2150	2180	30	Sandstone, brownish gray to very dusky red, very fine grained, argillaceous, somewhat micaceous; some grayish red to grayish brown shale
2180	2200	20	Shale, very dusky red; small amount of dark greenish gray (silty)
2200	2215	15	Sandstone, light to medium gray, some medium dark gray to dark greenish gray, very fine grained, somewhat chloritic in part, somewhat carbonaceous in part
2215	2240	25	Shale, very dusky red, some dark gray, sandy in part; some dark greenish gray to dark gray sandstone, very silty, argillaceous
2240	2245	5	Shale, dark greenish gray to dark gray, sandy in part
<u>CHEMUNG FORMATION, 143 (plus) FEET</u>			
2245	2280	35	Sandstone, very fine grained, dark gray (carbonaceous) at the top, medium gray (somewhat carbonaceous) in the middle part, medium light gray (slightly carbonaceous) in the lower part, somewhat micaceous and kaolinitic
2280	2300	20	Sandstone (very fine grained) to siltstone, medium dark gray (with greenish cast), somewhat carbonaceous, somewhat chloritic, contains mica and kaolinitic material
2300	2331	31	Sandstone, light to medium gray at the top to light gray at the bottom, very fine to medium grained, sub-rounded to rounded, some coarse to very coarse grains, somewhat argillaceous in the upper part
2331	2342	11	Sandstone, very light to light gray, conglomeratic, fine to very coarse grained, with many granules, sub-rounded, some of the grains show secondary crystal facets
2342	2349	7	Sandstone, very light to light gray, very fine to medium grained, some coarse grains
2349	2359	10	Siltstone to sandstone (very fine), medium gray to medium dark gray
2359	2380	21	Shale, and some siltstone, medium dark to dark gray
2380	2388	8	Siltstone, medium dark gray to medium dark greenish gray, somewhat chloritic, contains mica and kaolinitic material
2388			TOTAL DEPTH