

L. J. Rinehart No. 1 Well

Grant District, Ritchie County, W. Va.

By Benedum-Trees Oil Company, Pittsburgh, Pa.

Located 4.51 Mi. S. of 39° 20' and 1.20 Mi. W. of 81° 10' - S W -
St. Marys Quadrangle.

Elevation 850' L.

Permit, Ritchie 941

Drilling commenced March 13, 1942; completed Sept. 15, 1942.

Dry Hole

According to the structure contour map the well starts in the lower part of the Dunkard, 70 feet below the Washington Coal.

Section is based on examination by J. H. C. Martens of samples from 307 to 5665', 6498 - 6590' and 7165 - 7280' and on drillers record.

Top	Bottom	Thickness	
			<u>Pennsylvanian, 1280, plus, feet.</u>
307	314	7	Siltstone, green, micaceous
314	324	10	Shale, red and green, with limestone nodules
324	337	13	Shale, red
337	350	13	Sandstone, green, fine, slightly calcareous, 60%; green and red shale 40%
350	353	3	Limestone, gray to brown, silty
353	359	6	Clay, gray, 40%; very light brown limestone, 40%; black shale with traces of coal, 20%
359	362	3	Shale, green, very silty
362	367	5	Siltstone, green
367	380	13	Siltstone and silty shale, gray, micaceous

Top	Bottom	Thickness	
380	390	10	Coal, 40%; light-gray shale and clay 50%; light-brown limestone, 10%
390	400	10	Coal, 40%; light-gray shale and clay 40%; brown limestone, 20%
400	408	8	Limestone, light-gray to brownish, pyritic
408	416	8	Clay and soft shale, red, calcareous
416	462	46	Siltstone, green, micaceous, with sider- ite spherulites; also some green shale; small amounts of calcareous material
462	483	21	Sandstone, light-green, fine to very fine, micaceous
483	498	15	Shale or mudstone, red, yellow, gray and dark-green, highly calcareous
498	506	8	Shale, red 50%; green calcareous siltstone and fine sandstone 50%
506	518	12	Shale, red; also some green shale and light- brown limestone
518	542	24	Clay, red and yellow, with much impure limestone
542	570	28	Shale, red, with a few calcareous nodules
570	576	6	Clay, red and yellow, with limestone nod- ules
576	581	5	Limestone, nearly white, very fine tex- tured
581	618	37	Clay, red and yellow, with limestone nod- ules
618	625	7	Limestone, light-gray, very fine textured, clayey
625	634	9	Sandstone, light-green, fine, calcareous
634	650	16	Shale, red and green, with limestone nod- ules
650	692	42	Shale, green, silty; small amount of lime- stone

Top	Bottom	Thickness	
692	704	12	Clay, gray, calcareous
704	744	40	Clay, red, calcareous; many small limestone nodules
744	751	7	Shale, green, calcareous
751	765	14	Sandstone, green, fine, silty, calcareous
765	792	27	Clay, red and yellow, calcareous; many small limestone nodules
792	800	8	Siltstone, light-green
800	812	12	Shale and siltstone, grayish-green
812	818	6	Shale, green
818	834	16	Siltstone and silty shale; dark-gray
834	849	15	Sandstone, light-gray to greenish, fine, micaceous
849	855	6	Siltstone, gray, shaly
855	865	10	Shale, dark-gray
865	878	13	Shale, dark-gray to black, pyritic; con- tains fossil shells
878	883	5	Clay, red, calcareous, 70%; fossiliferous black shale, 25%; coal 5%
883	890	7	Clay, red, calcareous
890	916	26	Sandstone, white, medium-grained
916	936	20	Shale, green, silty, with siderite spherulites
936	943	7	Siltstone, green, micaceous
943	960	17	Shale, green
960	966	6	Siltstone, light-gray, calcareous
966	975	9	Sandstone, nearly white, fine, calcareous
975	998	23	Siltstone and shale, grayish-green
998	1007	9	Shale, light-gray, soft, not distinctly laminated
1007	1026	19	Siltstone, gray

Top	Bottom	Thickness	
1026	1052	26	Sandstone, white, coarse
1052	1057	5	Siltstone, gray
1057	1063	6	Shale, gray, silty
1063	1088	25	Siltstone, gray, shaly
1088	1104	16	Shale and siltstone, gray
1104	1112	8	Shale, light-gray, with siderite spherulites
1112	1135	23	Siltstone, gray, sandy
1135	1145	10	Shale, light-gray to nearly white; trace of coal and black shale
1145	1162	17	Clay or soft shale, white, silty; contains many siderite spherulites; some fragments have conchoidal fracture
1162	1175	13	Shale, gray, soft
1175	1218	43	Sandstone, light-gray to white, medium grained
1218	1227	9	Shale, dark-gray, silty
1227	1239	12	Sandstone, gray, very fine, 50%; dark-gray to black shale, 45%; coal, 5%
1239	1272	33	Siltstone, dark-gray, shaly
1272	1282	10	Sandstone, light-gray, fine
1282	1297	15	Sandstone, white, medium-grained (Oil and gas, 1293')
1297	1310	13	Sandstone, gray with black streaks, fine
1310	1330	20	Shale and siltstone, gray to dark-gray
1330	1400	70	Sandstone, white to light-gray, medium-grained
1400	1420	20	Shaly, dark-gray, silty
1420	1429	9	Siltstone, gray
1429	1439	10	Shale, black, silty
1439	1500	61	Sandstone, nearly white, medium- to fine-grained; contains small specks of mica, chlorite, siderite, and carbonaceous material

Top	Bottom	Thickness	
1500	1514	14	Coal and black shale 50%; gray siltstone, 30%; coarse white sandstone, 20% (coal at 1512-1515' in record)
1514	1524	10	Sandstone, light-gray, very fine
1524	1562	39	Sandstone, white, coarse to very coarse, nearly all quartz; some rust stain on grains, 1535-1551' (oil and gas 1535-1558'; salt water, 1558-1577')
1563	1575	12	Sandstone, white, medium-grained, nearly all quartz
1575	1587	12	Sandstone, white to brown, fine, 40%; nearly white shale, 30%; black shale, 25%, siderite, 5%
			<u>Greenbrier Limestone, 68 feet</u>
1587	1603	16	Limestone, very light brown
1603	1608	5	Limestone, very light brown, 90%; green shale, 10%
1608	1613	5	Limestone, very light brown, somewhat oolitic
1613	1617	4	Limestone, very light brown, sandy
1617	1627	10	Sandstone, white and light-brown, fine, calcareous
1627	1632	5	Limestone, very light brown, oolitic
1632	1640	8	Limestone, nearly white, oolitic, slightly sandy
1640	1655	15	Limestone, nearly white, very sandy; larger grains are rounded and frosted; slightly dolomitic, 1645-1655'
			<u>Pocono Formation, 500 feet.</u>
1655	1662	7	Sandstone, nearly white, fine
1662	1670	8	Siltstone, light-gray, sandy, with siderite spherulites

Top	Bottom	Thickness	
1670	1720	50	Sandstone, white with green and brown specks, fine
1720	1746	26	Sandstone, white, fine- to medium-grained
1746	1755	9	Sandstone, white, coarse
1755	1777	22	Shale, dark-gray, silty
1777	1787	10	Shale and siltstone, dark-gray
1787	1792	5	Sandstone, light-brown, very fine, dolomitic
1792	1796	4	Sandstone, light-brown, fine, calcareous and dolomitic
1796	1807	11	Sandstone, light-gray, very fine
1807	1822	15	Shale, dark-gray, with sandy streaks
1822	1834	12	Shale and siltstone, gray
1834	1850	16	Siltstone, light-gray
1850	1860	10	Sandstone, very light gray, very fine, moderately calcareous
1860	2008	148	Siltstone and shale, gray; siltstone predominates in most samples and the greater part of the shale is silty
2008	2144	136	Shale, gray, silty, 70%; lighter gray siltstone, 30%; last sample, marked 2130-2144' contains about 10% of very dark gray shale
2144	2155	11	Shale, very dark gray, 20%; nearly white, very fine sandstone with specks of pyrite, 10%; gray siltstone with some silty shale, 70% (Sunbury Shale and Berea Sandstone; unless some of the siltstone belongs with the Berea, the Berea is estimated to be about one foot thick and to be at or a little above 2150')

Devonian Shales, 2458 feet

Top	Bottom	Thickness	
2155	2327	172	Siltstone, gray to grayish-green, shaly, slightly calcareous; contains a few fossil shells
2327	2350	23	Siltstone, gray to grayish-green, as above, 90%; grayish-red siltstone, 10%
2350	2397	47	Siltstone, gray to grayish-green
2397	2430	33	Siltstone, gray to grayish-green, 80%; grayish-red siltstone and silty shale 30%
2430	2482	52	Siltstone, grayish-green, 70 to 80%; gray shale, 30 to 20%
2482	2510	28	Siltstone, grayish-green, shaly, 80%; grayish-red siltstone, 20%
2510	2537	27	Shale, gray, silty, 70%; gray siltstone, 30%
2537	2579	42	Siltstone, gray, green and white, 70 to 80%; gray and grayish-red shale, 30 to 20%; some very fine sandstone included with siltstone
2579	2665	86	Siltstone, gray and green; small amounts of gray shale
2665	2680	15	Shale, grayish-green, very silty
2680	2982	302	Siltstone, gray to grayish-green, 60 to 80%; gray silty shale 40 to 20%
2982	2995	13	Shale, gray, very silty
2995	3100	105	Siltstone, gray, fine, shaly, 60 to 80%; gray shale, 40 to 20%
3100	3242	142	Shale, gray, a little darker than that above, interstratified with small amounts of siltstone
3242	3340	98	Shale and siltstone, gray; very similar to interval above, but amount of siltstone is larger and varies from 30 to 50%
3340	3616	276	Siltstone, gray to light-brown, mostly shaly, 50 to 60%; Gray shale, 40 to 20%; very dark gray shale, 10 to 30%

Top	Bottom	Thickness	
3616	3765	149	Shale and siltstone, gray, average composition is about 50% each of shale and siltstone, but there are considerable variations from this in individual samples.
3765	3777	12	Siltstone, gray and light-gray, shaly
3777	3869	92	Siltstone, gray, shaly, 70 to 80%; gray shale, 30 to 20%
3869	3975	106	Shale, gray; small amounts of gray siltstone and very dark gray shale
3975	3994	19	Shale, gray, 50%; gray to light brown siltstone, 35%; very dark gray shale 15%
3994	4525	531	Shale, dark-gray, with some light gray interbedded siltstone; small veins of dolomite, 4253-4270', and 4341-4354' (variations in color and texture of individual samples from 3994 to 5613' not described in detail)
4525	4572	47	Shale, dark-gray, with some lighter gray siltstone and a few fragments of brown to gray fine-textured limestone
4572	5200	628	Shale, dark-gray to very dark-gray; small amount of fine siltstone
5200	5506	306	Shale, black to dark-gray
5506	5620	114	Shale, black
5620	5630	10	Shale, black, 80%; brown fossiliferous limestone, 20%
<u>Huntersville Chert, 221 feet.</u>			
5613			Depth corrected from 5630 to 5613' by SLM
5613	5642	29	No sample
5642	5650	8	Limestone, brown, with a little chert, 60%; black shale, 40%

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Top	Bottom	Thickness	
5620	5630	10	Shale, black 80%, brown fossiliferous limestone 20%
			Hunterville chert, 921 feet.
			Depth corrected from 5630 to 5615 by S-L-M
5615	5640	25	No sample
5642	5650	8	Limestone, brown, with a little chert, 60%; black shale, 40%
5650	5663	13	Limestone, brown, very cherty, 50%; black shale 50%
	5834		Bottom of "Coniferous Lime" in record
			<u>Oriskany Sandstone, 77 feet.</u>
5834	5911	77	Same (show of gas 5849 - 5850') <u>Helderberg, Salina, and Lockport,</u> <u>1480 feet</u>
5911	6498	587	No samples
6498	6523	25	Dolomite-anhydrite rock, brown, very fine textured
6523	6528	5	Salt, nearly pure
6528	6575	47	Salt, with some dolomite and anhydrite
6575	6588	13	Salt and anhydrite
6588	6598	10	Dolomite, brown, very fine textured, with some salt and anhydrite
6598	6606	8	Lime (no samples to 7165'; information from driller's record)
6606	6621	15	Salt
6621	7055	434	Lime
7055	7088	33	Sand
7088	7165	77	Lime (salt water, 7070 to 7079')
7165	7206	41	Dolomite, brown to gray, 60 to 70%; dark- gray to black shale, 40 to 20%
7206	7280	74	Dolomite, brown, very finely crystalline
7280	7331	51	No samples; recorded as lime
	7331		Total Depth