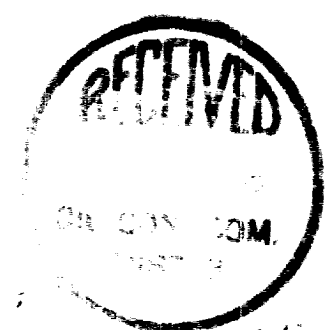


Handwritten signature



Handwritten checkmark

LARGO PROSPECT
JICARILLA APACHE TRINE NO. 1
TRACT NO. 208

RECEIVED
SEP 28 1956
U. S. GEOLOGICAL SURVEY
FARMINGTON, NEW MEXICO

SW NE SW Sec. 25, T. 24N., R. 4W.
RIO ARriba COUNTY, NEW MEXICO

RECORDED AUGUST 7, 1956
DELETED AUGUST 17, 1956
GAMMA ANALYSIS BY WILMAR W. GASTAFSSON

0 - 40	Sand, white to gray and tan, coarse to very coarse, angular to sub-angular, poorly sorted.
40 - 70	As above.
70 - 100	Sand, as above and shale, gray.
100 - 130	As above, less shale, gray; some sandstone, gray, salt and pepper, very fine grain, silty, very calcareous.
130 - 160	Sand, white to tan, coarse, angular to sub angular; some shale, gray.
160 - 190	As above.
190 - 205	Sand, white to tan, coarse, angular to sub-angular; some shale, gray; little shale, red; some sandstone, gray, salt and pepper, very fine grain, silty.
205 - 220	Missing sample.
220 - 230	Shale, gray to varicolored; little sand as above; much cement and other plug material.
230 - 240	As above.
240 - 250	Sandstone, white, medium grain, sub-angular; little shale, gray and varicolored.
250 - 260	As above.
260 - 270	As above.
270 - 280	Shale, as above; little sandstone as above.
280 - 290	As above.
290 - 300	As above.
300 - 310	Shale, as above; increase in shale, maroon.
310 - 320	Shale, gray and varicolored, some silty.
320 - 330	As above.
330 - 340	As above.
340 - 350	Shale, gray and varicolored, some silty; little sandstone, gray salt and pepper, very fine to fine grain.
350 - 360	As above.

360 - 370	As above.
370 - 380	As above.
380 - 390	As above.
390 - 400	As above.
400 - 410	As above.
410 - 420	As above.
420 - 430	As above, sandstone, increasing.
430 - 440	Sandstone, as above; some shale, as above.
440 - 450	As above.
450 - 460	As above.
460 - 470	Shale, as above; little sandstone, as above.
470 - 480	As above.
480 - 490	Shale, gray and varicolored; little sandstone, gray, salt and pepper, very fine to fine grain.
490 - 500	As above, sandstone increasing.
500 - 510	Sandstone, gray, salt and pepper, medium to coarse grain, angular to sub-angular; little shale, gray and varicolored.
510 - 520	As above, shale increasing.
520 - 530	As above.
530 - 540	As above.
540 - 550	As above, shale increasing.
550 - 560	As above, sandstone increasing.
560 - 570	As above, sandstone increasing, fair to good porosity.
570 - 580	As above, shale increasing.
580 - 590	Shale, as above; little sandstone, as above.
590 - 600	As above.
600 - 610	As above, sandstone increasing.

610 - 620	Sandstone, as above; little shale, as above.
620 - 630	Sandstone, gray, salt and pepper, medium to coarse grain, sub-angular; shale, gray and varicolored.
630 - 640	As above, sandstone increasing.
640 - 650	As above, sandstone increasing.
650 - 660	As above.
660 - 670	As above, shale increasing.
670 - 680	Missing sample.
680 - 690	Shale, as above; little sandstone, as above.
690 - 700	As above.
700 - 710	Missing sample.
710 - 720	Shale, as above and sandstone, as above.
720 - 730	As above.
730 - 740	Sandstone, as above; little shale, as above.
740 - 750	Shale, as above and sandstone, as above.
750 - 760	As above.
760 - 770	Sandstone, gray, salt and pepper, medium to coarse grain, sub-angular; shale, gray and varicolored.
770 - 780	As above, slight shale increase.
780 - 790	Sandstone, as above; little shale, as above.
790 - 800	As above.
800 - 810	Shale, as above; some sandstone, as above.
810 - 820	As above.
820 - 830	As above.
830 - 840	Sandstone, as above; some shale, as above.
840 - 850	As above; shale increasing.
850 - 860	As above, shale increasing.

860 - 870	As above.
870 - 880	As above.
880 - 890	As above.
890 - 900	Sandstone, as above; little shale, as above.
900 - 910	Sandstone, gray, salt and pepper, medium to coarse grain, sub-angular; little shale, gray and varicolored.
910 - 920	As above.
920 - 930	As above, shale increasing.
930 - 940	As above, shale increasing.
940 - 950	As above, sandstone increasing.
950 - 960	As above.
960 - 970	Shale, gray and varicolored; some sandstone, as above.
970 - 980	As above, sandstone increasing.
980 - 990	As above.
990 - 1000	As above, shale increasing.
1000 - 1010	Shale, gray and varicolored; little sandstone, gray, salt and pepper, medium to coarse grain, sub-angular to angular.
1010 - 1020	As above.
1020 - 1030	As above.
1030 - 1040	As above.
1040 - 1050	Sandstone, as above; little shale, as above.
1050 - 1060	As above, slight; shale increasing.
1060 - 1070	As above.
1070 - 1080	As above, slight; sandstone increasing.
1080 - 1090	As above, shale increasing.
1090 - 1100	As above, sandstone increasing.
1100 - 1110	As above, shale increasing.

1110 - 1120 As above, sandstone increasing.

1120 - 1130 As above.

1130 - 1140 As above, slightly shale, increasing.

1140 - 1150 Sandstone, gray, salt and pepper, medium to coarse grain, sub-angular to angular; little shale, gray and varicolored.

1150 - 1160 Shale, as above and sandstone, as above.

1160 - 1170 As above.

1170 - 1180 As above.

1180 - 1190 As above.

1190 - 1200 As above; trace coal.

1200 - 1210 Sandstone, as above; little shale as above.

1210 - 1220 As above, slight shale increase.

1220 - 1230 As above.

1230 - 1240 Shale, as above; some sandstone, as above.

1240 - 1250 As above, sandstone increasing.

1250 - 1260 As above, shale increasing.

1260 - 1270 As above.

1270 - 1280 As above.

1280 - 1290 Shale, gray and varicolored; some sandstone, gray, salt and pepper, fine to coarse grain, sub-angular.

1290 - 1300 As above.

1300 - 1310 As above, slight sandstone increase.

1310 - 1320 As above, shale increasing.

1320 - 1330 As above, slight sandstone increase.

1330 - 1340 Sandstone, as above; some shale, as above.

1340 - 1350 Shale, as above; some sandstone, as above.

1350 - 1360 As above, shale increase.

1360 - 1370	As above.
1370 - 1380	As above, slight sandstone increase.
1380 - 1390	As above.
1390 - 1400	As above.
1400 - 1410	As above, shale increasing.
1410 - 1420	As above,
1420 - 1430	Shale, gray and varicolored; little sandstone, gray, salt and pepper, fine to coarse grain, sub-angular.
1430 - 1440	As above, sandstone increase.
1440 - 1450	As above, shale increase.
1450 - 1460	As above, slight sandstone increase.
1460 - 1470	As above, sandstone increase. (little sandstone, pyritic)
1470 - 1480	As above, slight shale increase.
1480 - 1490	Shale, as above; very little sandstone, as above.
1490 - 1500	As above.
1500 - 1510	As above.
1510 - 1520	As above.
1520 - 1530	As above, slight sandstone increase.
1530 - 1540	As above.
1540 - 1550	As above, shale increase.
1550 - 1560	As above.
1560 - 1570	Shale, gray and varicolored; little sandstone, gray, salt and pepper, medium to coarse grain, sub-angular to angular.
1570 - 1580	Sandstone, as above and shale, as above.
1580 - 1590	As above.
1590 - 1600	Shale, as above; some sandstone, as above.
1600 - 1610	As above.

1610 - 1620	As above.
1620 - 1630	As above, slight sandstone increase.
1630 - 1640	As above.
1640 - 1650	As above, slight sandstone increase.
1650 - 1660	As above.
1660 - 1670	As above, shale increase.
1670 - 1680	As above,
1680 - 1690	As above.
1690 - 1700	As above, slight sandstone increase.
1700 - 1710	Shale, gray and varicolored; little sandstone, gray, salt and pepper, medium to coarse grain, angular to sub-angular.
1710 - 1720	As above, slight sandstone increase.
1720 - 1730	As above, slight sandstone increase.
1730 - 1740	Sandstone, as above and shale, as above.
1740 - 1750	As above, sandstone increase.
1750 - 1760	As above, shale increase.
1760 - 1770	Shale, as above; some sandstone, as above.
1770 - 1780	As above.
1780 - 1790	As above, sandstone increase.
1790 - 1800	As above.
1800 - 1810	As above.
1810 - 1820	As above, increased shale.
1820 - 1830	Shale, gray and varicolored; little sandstone, gray, salt and pepper, fine to coarse grain, sub-angular to angular.
1830 - 1840	As above, slight sandstone increase.
1840 - 1850	As above, slight shale increase.
1850 - 1860	As above, slight sandstone increase; trace coal.

1860 - 1870	As above.
1870 - 1880	As above.
1880 - 1890	As above, sandstone increasing.
1890 - 1900	As above.
1900 - 1910	As above, slight shale increase.
1910 - 1920	As above.
1920 - 1930	As above, slight shale increase.
1930 - 1940	As above.
1940 - 1950	As above.
1950 - 1960	As above.
1960 - 1970	Shale, gray and varicolored; little sandstone, fine to course grain, gray, salt and pepper, sub-rounded to sub-angular.
1970 - 1980	As above, slight shale increase.
1980 - 1990	As above.
1990 - 2000	As above.
2000 - 2010	As above.
2010 - 2020	As above, very slight sandstone increase.
2020 - 2030	Missing sample.
2030 - 2040	Shale, gray and varicolored; little sandstone, gray, salt and pepper, fine to course grain, sub-rounded to sub-angular.
2040 - 2050	As above.
2050 - 2060	As above, slight sandstone increase.
2060 - 2070	As above.
2070 - 2080	As above, sandstone increasing.
2080 - 2090	As above.
2090 - 2100	As above.
2100 - 2110	Shale, gray and varicolored; little sandstone, gray, salt and pepper, fine to course grain, sub-rounded to sub-angular.

2110 - 2120	Shale, gray and varicolored; little sandstone, gray, salt and pepper, fine to coarse grain, sub-rounded to sub-angular.
2120 - 2130	As above, trace coal.
2130 - 2140	As above.
2140 - 2150	As above, sandstone increasing.
2150 - 2160	As above, slight sandstone increase.
2160 - 2170	As above, shale increase.
2170 - 2180	As above.
2180 - 2190	Missing sample.
2190 - 2200	Shale, gray and varicolored; little sandstone, gray, salt and pepper, fine to coarse grain, sub-rounded to sub-angular.
2200 - 2210	As above.
2210 - 2220	As above.
2220 - 2230	As above.
2230 - 2240	As above.
2240 - 2250	Shale, gray and varicolored; little sandstone, gray, salt and pepper, fine to coarse grain, sub-rounded to sub-angular.
2250 - 2260	As above, slight sandstone increase.
2260 - 2270	As above, slight shale increase.
2270 - 2280	As above.
2280 - 2290	As above, sandstone increasing.
2290 - 2300	As above, sandstone increasing.
2300 - 2310	As above.
2310 - 2320	As above.
2320 - 2330	As above, shale increase.
2330 - 2340	As above, shale increase.
2340 - 2350	As above.
2350 - 2360	As above.

2360 - 2370	As above.
2370 - 2380	As above, slight sandstone increase.
2380 - 2390	Shale, gray and varicolored; little sandstone, gray, salt and pepper, fine to coarse grain, sub-rounded to sub-angular.
2390 - 2400	As above, slight shale increase.
2400 - 2410	Sandstone, as above and shale, as above.
2410 - 2420	Shale, as above and some sandstone, as above.
2420 - 2430	As above, shale increase.
2430 - 2440	As above.
2440 - 2450	As above.
2450 - 2460	As above.
2460 - 2470	As above.
2470 - 2480	As above.
2480 - 2490	As above, sandstone increasing.
2490 - 2500	As above, shale increasing.
2500 - 2510	As above, sandstone increasing.
2510 - 2520	As above, shale increasing.
2520 - 2530	Shale, gray and varicolored; some sandstone, gray, salt and pepper, fine to coarse grain, sub-rounded to sub-angular.
2530 - 2540	As above, sandstone increasing.
2540 - 2550	As above.
2550 - 2560	As above.
2560 - 2570	As above, shale increasing.
2570 - 2580	As above.
2580 - 2590	As above.
2590 - 2600	As above, slight sandstone increase.
2600 - 2610	As above, slight shale increase.
2610 - 2620	As above, sandstone increasing; trace sandstone, pyritic.

2620 - 2630	As above, slight shale increase.
2630 - 2640	As above, sandstone increasing.
2640 - 2650	Sandstone, as above; trace sandstone, pyritic; some shale, as above.
2650 - 2660	As above.
2660 - 2670	Shale, gray and varicolored; some sandstone, gray, salt and pepper, medium to coarse grain, sub-rounded to angular; trace sandstone, pyritic; trace coal.
2670 - 2680	As above, sandstone increasing; trace coal and shale, carbonaceous.
2680 - 2690	As above, sandstone increasing; trace sandstone, pyritic.
2690 - 2700	As above, shale increasing; trace sandstone, pyritic.
2700 - 2710	As above, trace sandstone, pyritic.
2710 - 2720	As above, shale increasing; trace shale, carbonaceous (?)
2720 - 2730	As above, sandstone increasing.
2730 - 2740	As above, slight increase in sandstone, pyritic.
2740 - 2750	As above.
2750 - 2760	As above, slight shale increase.
2760 - 2770	As above, slight increase in sandstone, pyritic; trace coal.
2770 - 2780	As above, shale increasing.
2780 - 2790	As above.
2790 - 2800	As above.
2800 - 2810	Shale, gray to dark gray, varicolored (mostly light green), some silty; little sandstone, white to gray, salt and pepper, fine to coarse grain, sub-rounded to sub-angular.
2810 - 2820	As above.
2820 - 2830	As above, slight sandstone increase; trace shale, carbonaceous.
2830 - 2840	As above, slight shale increase; trace shale, carbonaceous; trace sandstone, pyritic.
2840 - 2850	As above, trace coal; trace sandstone, pyritic.
2850 - 2860	As above, slight coal increase and shale, carbonaceous.

2860 - 2870 As above, slight coal increase.

2870 - 2880 As above, less coal and shale, carbonaceous

2880 - 2890 As above; slight increase coal and shale, carbonaceous; trace sandstone, pyritic.

2890 - 2900 As above; coal increase.

2900 - 2905 As above, coal increase to over 25%.

2905 - 2910 As above, much less coal.

2910 - 2915 As above, slight coal increase.

2915 - 2920 As above, slight coal increase.

2920 - 2925 As above, slight coal decrease.

2925 - 2930 As above, slight coal decrease; sandstone increase.

2930 - 2935 As above, sandstone decrease; coal increase to over 75% of sample.

2935 - 2940 As above, coal increase to 90% of Sample.

2940 - 2945 Coal and some shale, carbonaceous; some shale, gray.

2945 - 2950 As above, slight coal increase.

2950 - 2960 As above.

2960 - 2970 As above; little sandstone, gray, salt and pepper, fine grain, sub-rounded to rounded.

2970 - 2980 As above; shale increase.

2980 - 2990 As above.

2990 - 2995 Core # 1, cut 5'; recovered 4.65' shale, gray, containing abundant carbonaceous plant remains.

2995 - 2996 Core # 2, cut 15'; recovered 12.75'; .25' shale, gray, containing coal particles; .50' shale, gray with thin coal stringers.

2996 - 2997 Shale, gray, containing coal particles, silty to very fine sandy.

2997 - 2998 As above.

2998 - 2999 As above.

2999 - 3000 As above.

3000 - 3001 As above.

- 3001 - 3002 Shale, gray, containing coal particles, silty to very fine sandy with thin stringers of sandstone, gray, very fine grain to fine grain, calcareous, becoming less sandy toward base.
- 3002 - 3003 As above.
- 3003 - 3004 Interlaminated coal, shaly; shale, gray, containing particles of coal. (Coal contains tiny seams of resinous material which fluoresces light blue.)
- 3004 - 3005 As above.
- 3005 - 3006 Shale, carbonaceous, containing particles of coal.
- 3006 - 3007 Shale, brown to gray, containing particles of coal; shale, dark gray, containing particles of coal, very carbonaceous to coal, shaly.
- 3007 - 3008 As above.
- 3008 - 3009 Core # 3, cut 10'; recovered 5.5'; coal with thin veins resinous material (fluoresces light blue).
- 3009 - 3010 As above.
- 3010 - 3011 As above.
- 3011 - 3012 As above.
- 3012 - 3013 As above.
- 3013 - 3014 As above.
- 3014 - 3015 As above.
- 3015 - 3016 As above.
- 3016-3017 As above.
- 3017 - 3018 As above.
- 3018 - 3019 Core # 4, cut 10'; recovered 7.75'; (0.5' recovered on Core # 5) Loss of 1.75' probably occurs within upper 3' of interval which are here represented by 2" coal; 2" shale, brown to gray, containing particles and partings of coal; 2" shale, gray, almost entirely bentonite; 6" coal.
- 3019 - 3020 As above.
- 3020 - 3021 As above.
- 3021 - 3022 Coal with stringers of shale, dark gray to black, carbonaceous.

- 3022 - 3023 Shale, gray to dark gray containing abundant carbonaceous material in upper 6".
- 3023 - 3024 Shale, dark gray.
- 3024 - 3025 As above.
- 3025 - 3026 Shale, dark gray, slightly carbonaceous.
- 3026 - 3027 Upper 5" = Shale, dark gray, slightly carbonaceous.
Lower 7" = Sandstone, gray, salt and pepper, fine grain, sub-rounded. (Pictured Cliffs)
- 3027 - 3028 Sandstone, light gray to gray, salt and pepper, fine grain, sub-rounded with $\frac{1}{8}$ " shaly streak at 3027.2 containing carbonaceous fragments.
- 3028 - 3029 Core # 5, cut 12'; recovered 12.5'; (0.5' from Core # 4), sandstone, gray, salt and pepper, fine grain, sub-rounded.
- 3029 - 3030 Sandstone, gray, salt and pepper, fine grain, sub-rounded with .5" shale, dark gray, slightly carbonaceous at 3029'.
- 3030 - 3031 As above.
- 3031 - 3032 As above.
- 3032 - 3033 As above with thin gray shale parting at 3033'.
- 3033 - 3034 Sandstone, gray, salt and pepper, fine grain, sub-rounded, some friable.
- 3034 - 3035 Sandstone, gray, salt and pepper, fine grain, sub-rounded, containing several particles of coal.
- 3035 - 3036 Sandstone, gray, salt and pepper, fine grain, sub-rounded, with shale streaks in upper 3".
- 3036 - 3037 Sandstone, gray, salt and pepper, fine grain, sub-rounded (finer grained 3036 to 3036.75')
- 3037 - 3038 Sandstone, gray, salt and pepper, fine grain, sub-rounded, containing shale particles at 3037'.
- 3038 - 3039 Sandstone, gray, salt and pepper, fine grain, sub-rounded.
- 3039 - 3040 As above.
- 3040 - 3041 Core # 6, cut 7'; recovered 7'; sandstone, gray, salt and pepper, fine grain, sub-rounded with black shale partings at 3040.3' and 3040.4'.

- 3041 - 3042 Sandstone, gray, salt and pepper, fine grain, sub-rounded.
- 3042 - 3043 As above.
- 3043 - 3044 Sandstone, gray, salt and pepper, fine grain, sub-rounded, becoming more black (more carbonaceous) between 3043.5' and 3044'.
- 3044 - 3045 Sandstone, gray, salt and pepper, fine grain, sub-rounded, shaly and black 3044.5'.
- 3045 - 3046 Sandstone, gray, salt and pepper, fine grain, sub-rounded.
- 3046 - 3047 As above.
- 3047 - 3048 Core # 7, cut 15'; recovered 12½'; sandstone, gray, salt and pepper, fine grain, sub-rounded, with thin coal laminae at 3047.4'.
- 3048 - 3049 Sandstone, gray, salt and pepper, fine grain, sub-rounded.
- 3049 - 3050 Sandstone, gray, salt and pepper, fine grain, sub-rounded, with carbonaceous particles and partings.
- 3050 - 3051 Sandstone, gray, salt and pepper, fine grain, sub-rounded, looks wet on fresh break.
- 3051 - 3052 Sandstone, gray, salt and pepper, fine grain, with carbonaceous particles and partings.
- 3052 - 3053 As above.
- 3053 - 3054 Sandstone, gray, salt and pepper, fine grain, sub-rounded.
- 3054 - 3055 Sandstone, gray, salt and pepper, fine grain, sub-rounded 3054.0'-3054.1 shale, light gray, silty 3054.1-3055.0
- 3055 - 3056 Shale, silty grading downward into shale, gray. (not silty)
- 3056 - 3057 Sandstone, gray, salt and pepper, fine grain, sub with thin laminae of shale, gray, silty.
- 3057 - 3058 Shale, dark gray to gray, some silty; sandstone, gray, salt and pepper, fine grain 3057.1 - 3057.2.
- 3058 - 3059 Shale, gray to dark gray, some slightly silty.
- 3059 - 3060 Shale, dark gray, 3059.0 - 3059.1; sandstone, gray, salt and pepper, fine grain, sub-rounded.
- 3060 - 3061 Sandstone, gray, salt and pepper, fine grain, sub-rounded.
- 3061 - 3062 As above. (3059.7 to 3062 recovered with Core # 8.)

3062 - 3063 Core # 8, cut 12'; recovered 13.3' (1.3' of Core # 7); sandstone, gray, salt and pepper, fine grain, sub-rounded, looks wet on fresh break, no fluorescence.

3063 - 3064 As above.

3064 - 3065 As above.

3065 - 3066 As above.

3066 - 3067 As above.

3067 - 3068 As above.

3068 - 3069 As above.

3069 - 3070 As above.

3070 - 3071 As above.

3071 - 3072 As above.

3072 - 3073 As above.

3073 - 3074 As above.

3074 - 3075 Core # 9; cut 14'; recovered 14'; shale, gray, silty, 3074.0' to 3074.2' grading downward into sandstone, gray, salt and pepper, fine grain, sub-rounded.

3075 - 3076 Sandstone, gray, salt and pepper, fine grain, sub-rounded, becoming darker gray, 3075.8' to 3076.0' looks wet on fresh break.

3076 - 3077 Sandstone, gray (darker, some brown to gray), salt and pepper, fine grain, sub-rounded, fractured vertically thru entire foot (1' fracture).

3077 - 3078 Sandstone, gray (light again), salt and pepper, fine grain, sub-rounded; looks wet on fresh break.

3078 - 3079 As above.

3079 - 3080 As above.

3080 - 3081 As above.

3081 - 3082 Sandstone, gray, salt and pepper, fine grain, sub-rounded, containing large shale fragments; at 3081.1 to 3081.5 shale, dark gray.

3082 - 3083 Sandstone, gray, salt and pepper, fine grain, sub-rounded; looks wet on fresh break, no fluorescence.

3083 - 3084 As above.

3084 - 3085 As above.

3085 - 3086 As above.

3086 - 3087 As above.

3087 - 3088 As above.

3088 - 3089 Core # 10; cut 14'; recovered 14'; sandstone, gray, salt and pepper, fine grain, sub-rounded; looks wet on fresh break, no fluorescence.

3089 - 3090 As above.

3090 - 3091 3090.0 to 3090.2', sandstone, gray, salt and pepper, fine grain, sub-rounded, wet; 3090.2 to 3091.0, sandstone as above, with black shale streaks.

3091 - 3092 Shale, dark gray to black with streaks of sandstone, gray, salt and pepper, fine grain, sub-rounded.

3092- 3093 Sandstone, gray, salt and pepper, fine grain, sub-rounded with streaks of shale, dark gray at 3092.0 to 3092.2 and 3092.4 to 3092.6.

3093 - 3094 Sandstone, gray, salt and pepper, fine grain, sub-rounded, 3093.0 to 3093.7; shale, dark gray, 3093.7 to 3094.0.

3094 - 3095 Sandstone, gray, salt and pepper, fine grain, sub, little carbonaceous, slightly wet, 3094.0 to 3094.8; shale, dark gray, 3094.8 to 3095.0.

3095 - 3096 Shale, gray, silty and shale, dark gray.

3096 - 3097 Shale, dark gray with streak of sandstone, gray, salt and pepper, fine grain, sub-rounded, slightly wet, 3096.3 to 3096.5.

3097 - 3098 Shale, dark gray, 3097.0 to 3097.3; sandstone, gray, salt and pepper, fine grain, sub-rounded, 3097.3 to 3098.0 — slightly shaly in top 0.5'.

3098 - 3099 Sandstone, gray, salt and pepper, fine grain, sub rounded, 3098.0 to 3098.6 with calcareous streak at 3098.1; shale, dark gray, 3098.6 to 3099.0 with streaks of sandstone.

3099 - 3100 Shale, dark gray, containing carbonaceous particles with thin streaks sandstone, ~~gray~~, very fine grain throughout.

3100 - 3101 As above.

3101 - 3102 As above.