## SAMPLE AND ELECTRIC LOG TOPS

Cabot Corporation No. 1-32 Ruth Fischer
Section 32-32S-33W
Seward County, Kansas

| Formation | Sample | Electric Log | Sea Level Datum |
|---|---|---|---|
| Herington | | 2549' | + 305 |
| Krider | | 2573' | + 281 |
| Winfield | | 2660' | + 194 |
| Council Grove | | 2872' | - 18 |
| Base Heebner Shale | 4172' | 4180' | -1326 |
| Toronto | 4180' | 4188' | -1334 |
| Lansing | 4300' | 4307' | -1453 |
| Marmaton | 4976' | 4982' | -2128 |
| Cherokee | 5175' | 5180' | -2326 |
| Morrow Formation | 5550' | 5560' | -2706 |
| Chester | 5775' | 5772' | -2918 |
| Ste. Genevieve | 6126' | 6132' | -3278 |
| St. Louis | 6186' | 6180' | -3326 |

Due to a discrepancy in measurements, depths on the sample log are approximately 8-10 feet higher than Welex depths.

## Analysis of Oil and Gas Shows

Cherokee - Shows of oil were present in the Cherokee from approximately 5344-5376' (Electric Log depths) in a light brown fine to coarse crystalline, dense, fossiliferous, "resinous" appearing Limestone. The samples exhibited light spotty oil staining, spotty blue white fluorescence and made a fair cut in carbon tetrachloride. No gas show was recorded across this interval due to the clock being stopped on the recorder. No visible porosity was apparent in the samples; consequently, it was decided to look at the electric log before conducting a drill stem test.

Electric log calculations of the zone are as follows:

| Interval | Porosity-% | Saltwater-% |
|---|---|---|
| 5344-48' | 9 | 70 |
| 5354-57' | 3 | 98 |
| 5357-59' | 4 | 100 |
| 5361-64' | 4 | 100 |
| 5367-74' | 12 | 70 |

From both a visual examination of the samples and indicated porosities from the electric log, this zone is considered to have insufficient porosity to yield fluids.

Upper Morrow Sand - Upper Morrow Sand was very poorly developed in the No. 1-32 Fischer. A gray, very shaley, calcareous, tite sand was present from 5588-5614 feet. No porosity, fluorescence or cut were apparent in the cuttings. A slight gas show, approximately 15 units, was recorded from 5594-5604 feet (corrected to Electric Log).

A drill stem test covering the sand interval from 5550-5660 feet (corrected to Electric Log) had a very weak blow of air, dying in 30 minutes, and recovered 70 feet of drilling mud.

The sand is obviously too shaley and impermeable to produce hydrocarbons.

Lower Morrow - Shows of gas were present in the Lower Morrow from approximately 5720'-5734' (95 units) and 5746'-5772' (200 units) depths corrected to electric log. The upper show (5720-34') occurred in a tan to brown, coarse crystalline, very fossiliferous to cream chalky limestone. The samples exhibited no visible porosity, dull yellow fluorescence and no cut. The second show (5746-72') occurred in a dark brown to gray dense oolitic limestone (5744-50') and a gray, fine-grained, shaley, glauconitic, slightly fossiliferous sandstone (5754-72'). No fluorescence or cut were noted in the samples. Some fairly clean friable sand was present from approximately 5760'-5770'.

A drill stem test from 5686-5778 feet (corrected to Electric Log) covering both zones surfaced gas in 15 minutes of the second flow period too small to measure. After 45 minutes, gas guaged 16,660 CF on a 5/32 in choke. Recovery was 115 feet of gas cut drilling mud.

Electric log calculations of the Lower Morrow are given below:

| Interval | Porosity-% | Saltwater-% |
|---|---|---|
| 5719-22' | 9.5 | 57 |
| 5722-24' | 6.5 | 73 |
| 5724-26' | 8.5 | 53 |
| 5726-32' | 7 | 58 |
| 5758-61' | 14 | 70 |
| 5761-66' | 30 | 38 |
| 5766-69' | 20 | 53 |
| 5769-72' | 30 | 36 |

The relatively high porosities in the sand from 5758-72' are probably due to the high shale content of the sand.

The Lower Morrow is considered too impermeable to produce hydrocarbons in economical amounts.

St. Louis - A slight oil show was present in the St. Louis from approximately 6250-68' (corrected to Electric Log) in a buff, chalky, medium oolitic, fine crystalline to sucrosic, cherty, limestone. One piece of oolitic chert had black oil staining around the oolites and traces of fine sucrosic limestone with light staining, fluorescence and fair cut were noted. An increase in the gas readings of approximately 3-5 units was recorded in the upper 8 to 10 feet of the zone.

Log calculations of the St. Louis are as follows:

| Interval | Porosity-% | Saltwater-% |
|---|---|---|
| 6252-57' | 9 | 100 |
| 6257-59' | 7.5 | 100 |
| 6259-61' | 9 | 100 |
| 6264-68' | 9.5 | 100 |
| 6268-72' | 15 | 100 |
| 6275-78' | 11.5 | 100 |

A drill stem test of the zone conducted after logging, from 6240-78', recovered 90 feet of muddy oil, 540 feet oil and gas cut salty watery mud, 630 feet oil and gas cut muddy salt water, and 1560 feet salt water.

## STRUCTURAL RELATIONSHIP TO NEARBY WELLS

| Formation | Cabot #1-32 Fischer 32-32S-33W | Cabot #1 Harrell 5-33S-33W | Wilmar #1 Patterson-Fischer 5-33S-33W |
|---|---|---|---|
| Winfield | + 194 | + 167 | + 172 |
| Toronto | -1334 | -1367 | -1364 |
| Lansing | -1453 | -1485 | -1483 |
| Marmaton | -2128 | -2139 | -2153 |
| Cherokee | -2326 | -2361 | -2357 |
| Morrow | -2706 | -2743 | -2738 |
| Chester | -2918 | -2965 | -2961 |
| Ste. Genevieve | -3252 | -3289 | -3296 |
| St. Louis | -3326 | -3411 | -3370 |

From the above data it is seen that the No. 1-32 Fischer is structurally high to both wells in section five to the south. This is to be expected since the regional dip in the area is to the south-southeast.

## CONCLUSIONS AND RECOMMENDATIONS

No zones deemed capable of producing hydrocarbons in commercial quantities are present in the No. 1-32 Fischer. All significant shows were drill stem tested with negative results. It is therefore recommended that the No. 1-32 Fischer be plugged and abandoned.

Johnnie C. Ross

## DRILL STEM TEST RESULTS

Cabot Corporation et al
Ruth Fischer No. 1-32
Section 32-32S-33W
Seward County, Kansas

DST #1 -

| | | |
|---|---|---|
| Formation: | Upper Morrow | |
| Interval: | 5540-5650' (110 feet) | |
| Date: | 10/19/70 | |
| Tester: | Halliburton; Hydraulic, dual packers, safety joint, circulating sub | |
| Preflow: | Open 1:32 p.m., closed 2:02 p.m. (30 minutes) Very weak blow throughout | |
| Final Flow: | 70 minutes; No blow for 33 minutes; bypassed tool; weak blow for 30 minutes; died | |
| Recovery: | 70 feet drilling mud, no show | |
| Pressures: | IHP 2719# | FHP 2702# |
| | IFP 83-83# | FFP 83-100# |
| | ISIP 133# (45 min.) | FSIP 133# (90 min.) |
| | BHT 123° | |

DST (Misrun) 5648-5768' Packer failed immediately.

DST #2 -

| | | |
|---|---|---|
| Formation: | Lower Morrow Sand | |
| Interval: | 5676-5768' (92 feet) | |
| Date: | 10/20/70 | |
| Tester: | Halliburton; Hydraulic, dual packers, safety joint, circulating sub | |
| Preflow: | Open 30 minutes; good blow of air throughout. | |
| Final Flow: | 90 minutes; good blow of air immediately; gas to surface in 15 minutes; too small to measure; 45 minutes gas guaged 16,660 CF on 5/32 choke stabilized. | |
| Recovery: | 115 feet gas cut mud | |
| Pressures: | IHP 2654# | FHP 2654# |
| | IFP 65-65# | FFP 65-87# |
| | ISIP 630# (45 min.) | FSIP 1022# (90 min.) |

DST #3 -

| | | |
|---|---|---|
| Formation: | St. Louis | |
| Interval: | 6240-6278' (38 feet) | |
| Date: | 10/26/70 | |
| Tester: | Halliburton; Hydraulic, straddle packers, jars safety joint, circulating sub | |
| Preflow: | 30 minutes; good blow air throughout | |
| Final Flow: | 90 minutes; good blow air throughout | |
| Recovery: | 90 feet muddy oil, 540 feet oil and gas cut salty watery mud, 630 feet oil and gas cut muddy salt water, 1560 feet salt water | |
| Pressures: | IHP 3180# | FHP 3039# |
| | IFP 141-591# | FFP 591-1369# |
| | ISIP 1887# (45 min.) | FSIP 1887# (90 min.) |

## BIT RECORD

Cabot Corporation
No. 1-32 Ruth Fischer
Section 32-32S-33W
Seward County, Kansas

| Bit No. | Make | Size | Type | Depth Out | Footage | Hrs. Run | Remarks |
|---|---|---|---|---|---|---|---|
| 1 | Smith | 12-1/4" | DT | 1640' | 1640' | 19-1/2 | |
| 2 | Smith | 7-7/8" | DT | 2500' | 860' | 16-1/4 | |
| 3 | Hughes | 7-7/8" | OW4J | 2828' | 328' | 16-3/4 | |
| 4 | Smith | 7-7/8" | SS3 | 4434' | 1606' | 75-1/4 | |
| 5 | Hughes | 7-7/8" | J44 | 5107' | 673' | 42-1/2 | R.R. |
| 6 | Hughes | 7-7/8" | J44 | 5422' | 315' | 29 | R.R. |
| 7 | Smith | 7-7/8" | V2J | 5650' | 228' | 14-3/4 | |
| 8 | Hughes | 7-7/8" | OW4J | 5875' | 225' | 15 | |
| 9 | Smith | 7-7/8" | SS4 | 6350' | 475' | | T.D. |