



H. E. ZOLLER, JR.
PETROLEUM GEOLOGIST
CALIFORNIA BUILDING
DENVER, COLORADO

Final Report

July 17, 1956

Chandler-Musgrove Inc.
No. 1 Nelson
Commenced: 7/9/56
Completed: 7/16/56
Elevation: 4626.7 G.L.
4634 K.B.

Logan County, Colorado
Center NE SW
Section 29-12N-55W
Casing 8 5/8" @ 180'
Total Depth: 5992 Schlumberger
5995 Rotary

Samples were examined on the above well from 4900 feet to total depth. An Elgen Electric Log was run from the base of the surface pipe to total depth and an Elgen Permalog was run from 5470 to total depth. Electric log measurements were found to be eight feet higher than those recorded by Schlumberger. The following are electric log formation tops; (Note all measurements are taken from Kelly bushings).

| | |
|-----------|--------------|
| Niobrara | 4962 |
| Fort Hays | 5270 |
| Carlile | 5337 |
| Greenhorn | 5529 |
| Bentonite | 5696 |
| "D" Sand | 5802 (-1168) |
| "J" Sand | 5908 (-1274) |

"D" Sand

One core was taken in the "D" Sand as follows:

- Core #1 5803-40 (full recovery)
- 5803-13 Sandstone grey very fine grain - fine grain silty poorly sorted hard 50% dark grey shale partings interbedded finely reworked in part, no odor stain or fluorescence, no porosity or permeability.
 - 5813-18 Sandstone grey fine grain well sorted hard 15% thin black carbonaceous shale partings interbedded throughout, no odor stain or fluorescence very low porosity and permeability, trace vertical fractures, possibly water bearing.
 - 5818-22 $\frac{1}{2}$ Sandstone white-light grey fine grain silty hard with 60% dark grey silty shale partings interbedded, no show, no porosity or permeability.
 - 5822 $\frac{1}{2}$ -23 $\frac{1}{2}$ Sandstone grey fine - medium grain poorly sorted clean friable fair odor even stain and fluorescence low porosity and permeability.



- 5823 $\frac{1}{2}$ -26 Same sand as above no show very low porosity and permeability possibly water bearing.
 5826-31 $\frac{1}{2}$ Sandstone grey very fine grain - fine grain silty very-hard 50% dark grey silty shale partings interbedded, no show, no porosity or permeability.
 5831 $\frac{1}{2}$ -40 As above increase to 70% shale.

Coreing time in min./ft.

| | | | |
|---------|---------|---------|---------|
| 5803-04 | 5812-13 | 5821-22 | 5830-31 |
| 5804-05 | 5813-14 | 5822-23 | 5831-32 |
| 5805-06 | 5814-15 | 5823-24 | 5832-33 |
| 5806-07 | 5815-16 | 5824-25 | 5833-34 |
| 5807-08 | 5816-17 | 5825-26 | 5834-35 |
| 5808-09 | 5817-18 | 5826-27 | 5835-36 |
| 5809-10 | 5818-19 | 5827-28 | 5836-37 |
| 5810-11 | 5819-20 | 5828-29 | 5837-38 |
| 5811-12 | 5820-21 | 5829-20 | 5838-39 |
| | | | 5839-40 |

Core Analysis

| <u>Depth</u> | <u>Horiz. Perm.</u> | <u>Vert. Perm.</u> | <u>Por.</u> | <u>Oil</u> | <u>Wrt.</u> |
|--------------|---------------------|--------------------|-------------|------------|-------------|
| 5823-24 | 40 | 29 | 12.9 | 8.5 | 43.5 |
| 5824-25 | 7.4 | 4.4 | 14.2 | 0.0 | 83.9 |

No drill stem tests were taken in the "D" Sand.

"J" Sand

One core was taken in the "J" Sand as follows:

- Core #2 5907-32 (full recovery)
 5907-07 $\frac{1}{2}$ Shale dark grey silty bentonitic
 5907 $\frac{1}{2}$ -09 Sandstone grey very fine grain very silty hard, black carbonaceous shale partings and inclusions, no show, no porosity or permeability.
 5909-11 Shale black fissle
 5911-12 Siltstone dark grey hard
 5912-13 Sandstone grey fine grain clean well sorted hard no show, very low porosity or permeability, appears water bearing.
 5913-17 Sandstone grey very fine grain silty hard 50% dark grey silty shale reworked, no show, no porosity or permeability.
 5917-21 $\frac{1}{2}$ Sandstone grey very fine grain hard 15% black thin carbonaceous shale partings interbedded, no show, low porosity and permeability, vertical fractures throughout, possibly water bearing, 2" shale break at base.
 5921 $\frac{1}{2}$ -23 Sandstone grey fine - medium grain friable very slight trace lignitic fossil inclusions, weak odor uniform stain and fluorescence, heavily fractured, low porosity and permeability.



- 5923-26 Sandstone grey very fine grain silty very hard 50% dark grey silty shale partings interbedded, no show, no porosity or permeability.
- 5926-30 As above increase to 70% shale
- 5930-32 Shale dark grey silty very slight trace thin sand stringers interbedded.

Coreing time in min./ft.

| | | | |
|---------|---------|---------|---------|
| 5907-08 | 5914-15 | 5920-21 | 5926-27 |
| 5908-09 | 5915-16 | 5921-22 | 5927-28 |
| 5909-10 | 5916-17 | 5922-23 | 5928-29 |
| 5910-11 | 5917-18 | 5923-24 | 5929-30 |
| 5911-12 | 5918-19 | 5924-25 | 5930-31 |
| 5912-13 | 5919-20 | 5925-26 | 5931-32 |
| 5913-14 | | | |

No core analysis or drill stem tests were taken in the "J" Sand.

Conclusion.

Structurally measuring from the "D" Sand sub-sea datum the #1 Nelson was thirteen feet higher than the New Drilling Co. #1 Peavey a dry hole located $\frac{1}{2}$ mile west and $\frac{1}{4}$ mile south. The #1 Nelson was primarily a "D" Sand prospect playing the thick and partly saturated sand section found in the afore to mentioned Peavey test. The structural location of the #1 Nelson proved to be ideal but the sand development was poor. This also proved to be the case in the "J" Sand.

The #1 Nelson was plugged and abandoned July 16, 1956 and the drilling samples were placed on file at the American Stratigraphic Company, Denver, Colorado.

Respectfully Submitted,

H.E. Zoller, Jr.

Chandler-Musgrove Inc.
#1 Nelson

Bit Record

July 17, 1956

| <u>Run No.</u> | <u>Size</u> | <u>Make</u> | <u>Type</u> | <u>Serial</u> | <u>From</u> | <u>To</u> | <u>Feet</u> | <u>Hours</u> |
|----------------|-------------|-------------|-------------|---------------|-------------|-----------|-------------|--------------|
| 1 | 7 7/8 | HTC | OSC*3J | 88402 | 181 | 3218 | 3037 | 20 |
| 2 | 7 7/8 | HTC | OSC-3J | 84946 | 3218 | 4482 | 1264 | 22 3/4 |
| 3 | 7 7/8 | HTC | OSC-3J | 84742 | 4482 | 5274 | 792 | 16 |
| 4 | 6 3/4 | HTC | OSC-3J | 39495 | 5274 | 5811 | 537 | 17 |
| 5 | 6 3/4 | HTC | OWS | 40242 | 5811 | 5915 | 104 | 3 1/2 |
| 6 | 6 3/4 | HTC | OWS | 29630 | 5915 | 5995 | 80 | 4 |