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GEOLOGICAL REPORT

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COLO. OIL &amp; GAS CONS. COMM.

Prospect: Noonan Field

Operator: The Anschutz Corporation, Inc.

Farm name: No. 1 Townsend

Location: SE $\frac{1}{4}$  SW $\frac{1}{4}$  Section 14 - T 3 S - R 59 W  
(1965' FWL, 660' FSL)  
Adams County, Colorado

Elevation: 5076' ground, 5085' KB

Contractor: Denco Drilling Company, Denver, Colorado

Spud date: October 10, 1967

Completion date: October 18, 1967

Casing: 8-5/8" at 96' with 80 sacks

Total depth: 6220' driller, 6224' Schlumberger

Status: Plugged and abandoned

Surveys: Schlumberger IES surface to 6220 feet total depth;  
Schlumberger Gamma Ray-Density-Caliper 5700 feet  
to 6220 feet total depth.

Cores: None

Drill stem tests: DST #1, 6063-6078 ("D" sandstone)  
DST #2, 6058-6078 ("D" sandstone)

Samples: 6050 feet to 6220 feet total depth. Deposited at  
American Stratigraphic Service, Denver, Colorado.

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Formation Tops

	<u>Sample</u>	<u>Log</u>
Bentonite Marker		5958
"D" sandstone	6057	6057 (-972)
"J" sandstone	6154	6128 (-1043)
Total depth	6220	6224

Deviation Surveys

1-3/4°	2300'
2°	3502'
1-3/4°	4802'
2-1/4°	5230'

Mud Program

Mud program was supervised by a Plains Mud Company engineer. Mud properties were controlled with Milgel, phosphate, soda ash and caustic. No oil or diesel oil was added to the mud system. Weight varied from 9.7 to 10.2, viscosity from 51 to 85 and water loss from 12.2 to 7.0.

Chronological Well History

10/10/67 Spud 3:00 p.m. Set 8-5/8" casing at 96' with 80 sacks.  
WOC.

10/11/67 Drilling 1250'.

10/12/67 Drilling 2650'.

10/13/67 Drilling 4000'.

10/14/67 Drilling 5150'.

10/15/67 Drilling 5704'.

10/16/67 T.D. 6078'. Preparing to DST.  
25' depth correction 6103 to 6078'.

10/17/67 T.D. 6078'. DST #1, tool plugged. DST #2, recovered 90'  
mud.

10/18/67 T.D. 6220'. Running Schlumberger logs.  
Well P&A, 10:00 p.m.

Bit Record

<u>No.</u>	<u>Type</u>	<u>Size</u>	<u>Depth Out</u>	<u>Hours</u>	<u>Footage</u>
1	HTC OSC-3	7-7/8"	2300	16	2190
2	Security S-3	7-7/8"	3502	13-1/2	1202
3	Smith DT	7-7/8"	4802	17-3/4	1300
4	Smith DT	7-7/8"	5230	9-1/2	428
5	Smith DT2C	7-7/8"	5728	17-1/2	498
6	Security S-3	7-7/8"	6078	10	350
7	HTC OWC	7-7/8"	6183	10	105
8	Sec. MVN	7-7/8"	6220	1-1/2	37

Cores

None

Drill Stem Tests

DST No. 1      6063-6078' TD. ("D" sandstone). Tool plugged.

Dst No. 2      6058-6078'. ("D" sandstone).  
 No initial shut in, open 60 minutes, shut in 60 minutes.  
 Recovered 90' mud. IHP 3270, FHP 3238. IFP 44, FFP 65.  
 FSIP 382. (Possible mud damage indicated on DST chart.)

Tester:      Virg's Testers, Inc.

Plugging Record

10 sacks at base of surface casing.  
 15 sacks at top of surface casing.

Sample Descriptions  
 (not lagged)

6000-6057      Shale, dary grey to black, soft, micaceous, with bentonite streaks.

6057-6065      Top "D" sandstone

Sandstone, white to light grey, fine grained, argillaceous, clay-filled, tightly-cemented, no shows.

6057  
 6128



- 6065-6078 Sandstone, white to light grey, fine grained, sub-angular, clean, friable, hard, glassy grains, excellent fluorescence, poor cut, no visible oil stain, no odor, poor to fair porosity. Poor to fair oil show.
- 6078-6093 Sandstone, as above, but with no shows.
- 6093-6128 Shale, grey, micaceous, silty in lower ten feet.
- 6128-6160 "J" sandstone  
Sandstone, white to light grey, fine grained, tightly-cemented, clay-filled, with interbedded siltstone and shale, no shows.
- 6160-6180 Sandstone, white to light grey, fine grained, good porosity, with tiny shale inclusions, glassy, clear quartz grains, no shows. Interbedded with siltstone and shale.
- 6180-6220 TD. Siltstone, white to light grey, with interbedded shale and sandstone. No shows.

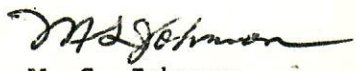
Log Calculations

<u>Depth</u>	<u>Porosity</u>	<u>S<sub>w</sub></u>
6074-6077	4%-6%	100%
6077-6080	3%	100%
6083-6087	2%-5%	100%
6148-6150	10%	100%
6164-6166	14%	90%
6166-6168	10%	100%
6168-6171	5%-8%	100%

Remarks

The No. 1 Townsend was drilled as an attempt to extend "D" sandstone production westward. It encountered the "D" sandstone at a lower structural position than anticipated. The "D" sandstone productive in the No. 1 Noonan well (SE $\frac{1}{4}$ SE $\frac{1}{4}$  Section 14-T3S-R59W) was present but not well-developed. Oil and gas shows were present in the sandstone unit but a drill stem test recovered only mud. The "D" section, a channel-type deposit, is only 37 feet thick on this well as compared to 70 feet on the No. 1 Noonan.

No shows of oil or gas were observed in the "J" sandstone.

  
M. S. Johnson  
October 19, 1967