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CONFIDENTIAL

GEOLOGICAL WELL REPORT

(See Upper Hole Report Dated 11/6/90)

CHANDLER & ASSOCIATES, INC.  
SOUTHWEST RANGELY FEDERAL 15-25-1N-3  
SW SE SEC. 25-T1N-R103W  
RIO BLANCO COUNTY, COLORADO

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COLORADO OIL & GAS CONS. COMM.

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February 22, 1991

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CHANDLER & ASSOCIATES, INC.  
SOUTHWEST RANGELY FEDERAL 15-25-1N-3  
SW SE Sec. 25-T1N-R103W  
Rio Blanco County, Colorado

ELEVATIONS: KB 6195', GL 6184'  
SURVEY: 500' FSL, 1820' FEL  
SPUD DATE: October 25, 1990. (See upper hole report, 11/6/90).  
DRILLING FLUID: Air to 6943', air/mist with 3% KCL water to TD.  
CORES: None  
TESTS: None  
LOG SURVEYS: Schlumberger DI-SFL/GR/SP, CNL-LD/GR and Dipmeter.  
TOTAL DEPTH: 8001' Driller, 7595' Logger.  
STATUS: Plugged and abandoned February 18, 1991.  
CONTRACTOR: Chandler Drilling Corp., Rig 1;  
TP Cotton Fladeland.  
GEOLOGIST: Pleas Stringer

<u>LOG TOPS:</u>	<u>DEPTH</u>
Mancos "B"	
Transition Zone	4182'
Upper Sand Zone	4317'
Main Porosity Zone	4346'
Base of Mancos "B"	4393'
Frontier ss	7373'
<u>SAMPLE TOPS:</u>	
Dakota Silt	7640'
Dakota ss	7700'
Cedar Mountain fm.	7850'
Morrison fm.	7963'

SAMPLES: Bulk samples of the Dakota ss were delivered to the Chandler office in Denver, Colorado.

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SAMPLE LITHOLOGIC DESCRIPTION

Depths to 7584' are adjusted to the electric logs.

MANCOS SH

- 4000-4130' Shale: dark gray, firm, fissile;  
Shale: dark gray, firm, fissile;  
Sandstone: light gray, very fine grained, well sorted,  
angular, clay filled, scattered black minerals, hard,  
tight, no shows.
- 4130-4182' Sandstone: light gray, very fine grained, well sorted,  
angular, clay filled, scattered black minerals, hard -  
firm, tight, no shows;  
Shale: dark gray, firm, fissile.

MANCOS "B" TRANSITION ZONE

- 4182-4244' Sandstone: light gray, very fine grained, well sorted,  
angular, clay filled, scattered black minerals, firm,  
poor porosity, no shows.
- 4244-4312' Sandstone: light gray, very fine grained, well sorted,  
angular, clay filled, scattered black minerals, hard,  
tight, no shows.

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UPPER SAND ZONE

- 4317-4346' Sandstone: light gray, very fine grained, well sorted,  
angular, partly clay filled, scattered black minerals,  
firm - hard, poor porosity, no shows.

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MAIN POROSITY ZONE

- 4346-4393' Sandstone: light gray, very fine grained, well sorted,  
angular, clay filled, scattered black minerals, hard,  
tight, no shows.
- 4393-4404' Siltstone: medium gray, hard.

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4404-4432' Shale: dark gray, firm, fissile.  
4432-4510' Siltstone: dark gray, firm;  
Shale: dark gray, firm, fissile.  
6400-6880' Shale: dark gray, silty in part, firm, fissile.  
6880-6965' Shale: dark gray, firm, fissile.  
6965-7105' Shale: dark gray, silty, hard, fissile.  
7105-7373' Shale: dark gray, hard, fissile.

FRONTIER SS

7373-7413' Sandstone (tr): white, very fine grained, well sorted, angular, clay filled, scattered black minerals, firm, tight, no shows;  
Calcite: white, brittle.  
7413-7465' Shale: dark gray, hard, fissile.  
7465-7484' Shale: dark gray, silty in part, firm, fissile.  
7484-7538' Shale: dark gray, firm, fissile.  
7538-7542' Sandstone: dark - medium gray, very fine grained, well sorted, angular, scattered black minerals, hard, tight, no stain, even blue white fluorescence, good cut.  
7542-7640' Siltstone: dark gray, hard;  
Limestone: medium gray, microcrystalline, hard, tight, no shows.

DAKOTA SILT

7640-7660' Siltstone: dark gray - some medium gray, hard;  
Limestone (tr): brown - buff, microcrystalline, hard, tight, even dark stain, even bright blue white fluorescence, good cut;

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Bentonite: light gray, firm;  
Pyrite (tr).

7660-7690' Sandstone (tr): medium - light gray, very fine grained, well sorted, angular, clay filled, scattered coal fragments and biotite, hard, tight, mineral fluorescence, no shows.

7690-7695' Sandstone (tr): medium gray, very fine grained, well sorted, angular, hard, tight, no stain, even bright blue white fluorescence, weak cut.

7695-7700' Sandstone (tr): dark gray, very fine grained, well sorted, angular, silty, hard, tight, no stain, even weak blue white fluorescence, weak cut.

DAKOTA SS

7700-7720' Sandstone: gray brown, very fine grained, well sorted, angular, hard, tight, even light stain - no stain, even bright - weak blue white fluorescence, good cut;  
Bentonite: gray, firm.

7720-7750' Sandstone: buff - brown, very fine - fine grained, fairly well sorted, angular - subangular, partly clay filled, hard - firm, poor porosity - tight, even light - dark stain, even bright - weak blue white fluorescence, good - weak cut.

7750-7760' Sandstone: brown, very fine grained, well sorted, angular, clay filled, firm, tight, even stain, even weak blue white fluorescence, weak cut.

7760-7785' Siltstone: dark gray, hard;  
Bentonite: light - dark gray, firm.

7785-7825' Sandstone: brown, very fine grained, well sorted, angular, hard, tight, even stain, even blue white fluorescence, good cut;  
Bentonite: light - dark gray, firm.

7825-7835' Sandstone: buff, very fine - medium grain, poorly sorted, angular - subangular, partly clay filled, scattered shale fragments, firm - hard, poor porosity, light stain, even bright blue white fluorescence, good cut.

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7835-7850' Sandstone: white, very fine - fine grained, poorly sorted, angular - subangular, partly clay filled, scattered shale fragments, hard, poor porosity, no shows.

CEDAR MOUNTAIN FM

7850-7860' Shale: gray green, waxy, brittle, hard, fissile.

7860-7890' Shale: gray green and brown, waxy, brittle, hard, fissile;  
Sandstone: white, very fine - medium grained, poorly sorted, angular - subangular, partly clay filled, scattered shale fragments, hard, poor porosity, no shows.

7890-7910' Limestone: gray green and tan, shaly, dense, hard.

7910-7963' Limestone: gray green and brown, shaly, dense, hard.

MORRISON FM

7963-7975' Sandstone: light gray, very fine - fine grained, fairly well sorted, angular, clay filled, firm, poor porosity, no shows;  
Shale: gray green and brown, waxy, brittle, hard, fissile.

7975-7980' Limestone: light gray, crypto - medium crystalline, hard, tight, uneven light stain?, even bright - weak blue white fluorescence, good - weak cut;  
Shale: gray green and brown, waxy, brittle, hard, fissile;  
Limestone: gray green and brown, shaly, dense, hard.

7980-7990' Siltstone: brown, hard;  
Shale: gray green and brown, waxy, pyritic in part, brittle, hard, fissile.

7990-8001' Shale (tr): green, waxy, firm, fissile;  
Shale: gray green and brown, waxy, silty in part, brittle, hard, fissile;

Pyrite  
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SUMMARY OF FLARE AND FLUID DATA

<u>DEPTH</u>	<u>OPERATION</u>	<u>FLARE AND WATER FLOWS (6" Flow Line)</u>
5514' to 6870'	Surveys	Two ft flares for 2-3 seconds following most surveys.
6066'	Unloading the hole	Momentary 4 ft flare.
6992'	Drilling	Hole may have started making some water.

DRILLING PROGRESS SUMMARY

1-27-91	Unloading the hole at 1216'.	
1-28-91	Trip out at 3618'.	
1-29-91	Ø 4062'.	
1-30-91	Ø 4710'.	
1-31-91	Ø 5174'.	
2- 1-91	Trip out for fishing job at 5361'.	Recovered fish.
2- 2-91	Ø 5617'.	
2- 3-91	Ø 6094'.	
2- 4-91	Ø 6503'.	
2- 5-91	Ø 6902'.	
2- 6-91	Unloading hole at 6943' prep to drill with air/mist.	
2- 7-91	Ø 6971'.	
2- 8-91	Ø 7212'.	Installed additional compressors and boosters.
2- 9-91	Ø 7435'.	
2-10-91	Ø 7915'.	
2-11-91	TD 8001'. Drill pipe stuck 55' off bottom.	Backed off with most of the drill pipe.
2-12-91	Trip out with part of fish.	
2-13-91	Mudding up while going in the hole at 800' increments.	Some oil with the KCl water being pumped out. Oil in the mud beginning at about 5100'.
2-14-91	Fishing.	
2-15-91	Fishing.	
2-16-91	Fishing.	Did not recover rest of fish.
2-17-91	Conditioning hole for logs.	
2-18-91	Running electric logs.	Plugged and abandoned.

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BIT RECORD

<u>BIT NO.</u>	<u>SIZE</u>	<u>MAKE</u>	<u>TYPE</u>	<u>DEPTH OUT</u>	<u>FEET</u>	<u>HOURS</u>
8	7-7/8"	Hughes	J-22 (RR)	3618'	413'	14
9	7-7/8"	Reed	HP62A	5355'	1737'	65
10	7-7/8"	Smith	F-4H	8001'	2646'	142

SURVEY RECORD

<u>DEPTH</u>	<u>DEVIATION</u>	<u>DEPTH</u>	<u>DEVIATION</u>
3879'	1-1/2°	5746'	6°
4247'	1-3/4°	5900'	6-1/2°
4591'	2-1/4°	6025'	6°
4828'	4-1/2°	6150'	6°
4949'	5-1/4°	6336'	8°
5145'	5-3/4°	6460'	7°
5257'	5-7/8°	6585'	6°
5345'	4-1/2°	6706'	6°
5475'	6-1/4°	6830'	6-1/2°
5617'	5-3/4°	6940'	6-1/4°

MUD RECORD

Mudded up for fishing job. Mud checked by C. J. Hart, Mustang Drilling Fluids.

<u>DEPTH</u>	<u>Wt</u>	<u>FV</u>	<u>PV</u>	<u>YP</u>	<u>GS</u>	<u>pH</u>	<u>WL</u>	<u>FC</u>	<u>CHLORIDES</u>
8001'	8.9	44	15	6	2/5	9.0	7.2	2/32	8000

PLUGGING RECORD

100 sacks of cement 7450-7596'  
 45 sacks of cement 3300-3400'  
 45 sacks of cement 100- 200'  
 20 sacks of cement at the surface

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Respectfully submitted,

*Pleas Stringer*

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