



A L L A N R. H A L L O C K

818 Midland Savings Building  
Denver, Colorado 80202  
623-4925

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AUG 14 1970

COLO. OIL & GAS CONS. COMM.

WELL REPORT

WEBB RESOURCES, INC.

No. 20-1 Bernal Wallace

NE/4 NE/4 of Section 20

Township 15 South, Range 42 West

Cheyenne Sounty, Colorado

Prepared by:

Allan R. Hallock  
Consulting Geologist  
Denver, Colorado  
August 4, 1970

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# STATISTICAL INFORMATION

OPERATOR: Webb Resources, Inc.

WELL NO: No. 20-1 Bernal Wallace

LOCATION: NE/4 NE/4 of Section 20,  
Township 15 South, Range 42 West  
Cheyenne County, Colorado

ELEVATION: 4033 G.L. 4044 K.B.

TOTAL DEPTH: 5755 Schlumberger 5760 Driller

LOG PROGRAM: Schlumberger Dual Induction-Laterolog,  
Amplitude Log, Borehole Compensated  
Sonic Log - Gamma Ray

CASING: 8-5/8" @ 293' with 222 sacks

SPUD DATE: July 14, 1970

COMPLETION DATE: July 30, 1970

CONTRACTOR: L & F Drilling Company

TOOL PUSHER: Stan Lindgreen

CORES: None

TESTS: 4984 - 5016 Atoka (Straddle Test)

WELLSITE GEOLOGIST: Allan R. Hallock

MUD LOGGING: None

PLUGGING DATA: 20 sacks at base of surface casing  
10 sacks at top of surface casing  
In accordance with Frank Piro, Oil  
and Gas Conservation Commission

## FORMATION TOPS

<u>Formation</u>	<u>Depth</u>	<u>Datum</u>
Stone Corral	2868	+1176
Pennsylvania	3880	+ 164
Topeka	3928	+ 116
Lansing	4218	- 174
Marmaton	4631	- 587
Cherokee	4800	- 756
Atoka	4960	- 916
Morrow	5106	-1062
Keys	5192	-1148
St. Genevieve	5173	-1229
St. Louis (?)	5332	-1288
Spargen	5406	-1362
Osage (P.A.) - Warsaw	5539	-1495
Osage (Webb)	5582	-1538
Arbuckle	5692	-1648
Total Depth	5760 Driller	5755 Schlumberger



### CHRONOLOGICAL HISTORY

7-14-70 Spudded, set 8-5/8" at 293' with 222 sacks.

7-15-70 Drilling 700'

7-16-70 Drilling 2010'

7-17-70 Drilling 2925'

7-20-70 Drilling 4130'

7-21-70 Drilling 4389', Top of Lansing 4290'

7-22-70 Drilling 4623'

7-23-70 Drilling 4872', Sample Top - Cherokee 4796'

7-24-70 Drilling 5060', Sample Top Atoka 4960'

7-25-70 DST #1 4984-5016

7-26-70 Drilling 5320', Sample Top St. Genevieve 5272

7-27-70 TD 5474', Lost circulation, Sample Top Spergen 5400. No shows, no porosity.

7-28-70 Drilling 5650', Sample Top Osage 5578, Sample description 5578-5630, fractured chert, good porosity, no shows. Expected to reach Arbuckle 5704 by tonite.

7-29-70 TD 5760, top of Arbuckle 5708, running logs.

7-30-70 Plugged and abandoned.  
Plugs: 20 sacks - bottom surface casing  
10 sacks - top surface casing

### BIT RECORD AND DEVIATION SURVEYS

<u>Bit No.</u>	<u>Make</u>	<u>Size</u>	<u>Type</u>	<u>Depth Out</u>	<u>Footage</u>	<u>Hours</u>	<u>Deviation</u>
1A	Retip	12-1/4	----	300	300	2	
1	STC	7-7/8	DTJ	1551	1251	11-1/4	1°
2	STC	7-7/8	DTJ	2335	784	19-1/2	1/2°
3	STC	7-7/8	DGTJ	3270	935	21-3/4	1/2°
4	STC	7-7/8	DGTJ	3601	331	12-1/2	
5	STC	7-7/8	DGTJ	3832	231	11-1/2	
6	STC	7-7/8	DGTJ	4074	242	17	
7	STC	7-7/8	DGTJ	4320	246	16-1/4	1/2°
8	STC	7-7/8	SS3	5007	687	67-1/4	0
9	STC	7-7/8	V1	5082	75	11	
10	STC	7-7/8	V1	5260	178	16-1/2	
11	STC	7-7/8	SS4	5760	500	48-1/4	

### DRILL STEM TEST

DST No. 1 4984-5016, Atoka (Straddle test)  
Open 10", very weak blow (1/4"); Shut in 60", Open 30", no blow; Shut in 60". Recovered 6' mud, no show.

IHP 2614  
First Flow Period 24-24  
ISIP 871

Second Flow Period 24-24  
FSIP 484  
FHP 2601  
BHT 132°



### SAMPLE DESCRIPTION

Sample Description begins @ 3200' - 30' unlagged samples

3200-3470	Shale and siltstone, red-orange; some sandstone, red-orange, very fine grained, occasionally anhydritic
3470-3530	As above, some white anhydritic sandstone, very fine grained.
3530-3640	Shale and siltstone, as above, with some red-brown sub-waxy shale; interbedded white anhydritic sandstone, as above.
3640-3670	Predominantly as above, trace light gray, gray-white, limestone, earthy, no visible porosity.
3670-3700	Limestone, white, cream, tan, gray-white, chalky, no visible porosity.
10' unlagged samples begin @ 3700;	
3700-3740	Limestone, light gray, tan, cream, microcrystalline, argillaceous, no visible porosity; chalky in part; interbedded shale and siltstone as above
3740-3780	Limestone, light gray, tan, cream, very fine microcrystalline, chalky in part.
3780-3800	Shale, red-orange, soft;
3800-3840	Limestone, white, cream, very fine crystalline, no visible porosity; cleaner and harder than above.
3840-3860	Predominantly shale and siltstone, red-orange
3860-3900	Limestone, predominantly light gray, dirty, some cream, chalky, no visible porosity.
10' lagged samples begin at 3900'	
3900-3940	Limestone, tan, light gray, very fine microcrystalline, no visible porosity; some white, cream, slightly chalky; occasionally fragmental, sandy; trace pyrite
3940-3950	Limestone, as above with some black pellets interbedded; interbedded gray argillaceous limestone, shaley.
3950-3980	Limestone, light gray, cream, white, chalky in part; some medium gray argillaceous limestone; some of white limestone is sandy, micro-oolitic
3980-3990	Shale, red-orange, sandy, silty; interbedded limestone as above
3990-4020	Limestone, white, sandy in part; microcrystalline, chalky; no visible porosity; one piece with trace pale yellow, spotty fluorescence, no cut or stain; interbedded red-orange shale, silty, sandy
4020-4060	Limestone, white, chalky, becoming cream, light tan, microcrystalline, no visible porosity, trace white opaque chert
4060-4070	Limestone, as above, some soft chalky limestone.



4070-4080	TRIP SAMPLE
4080-4100	Limestone, white, cream, less chalky, microcrystalline, sandy in part, few thin very fine grained sandstone lenses, calcareous, well cemented; limestone, occasionally slightly fragmental; few thin beds of gray-brown limestone, hard, dense, trace pyrite
4100-4110	Predominantly red-orange shale
4110-4130	Limestone, as above with increasing amount of interbedded brown-gray limestone, microcrystalline, hard, no visible porosity, occasionally slightly cherty
4130-4160	Limestone, cream, tan, microcrystalline, hard, slightly cherty, slightly fossiliferous, trace oolitic development, infilled, no porosity
4160-4180	Limestone, predominantly white, cream, becoming somewhat chalky
4180-4210	Limestone, as above, appears to be some dark gray-black shale interbedded; limestone, sandy in part
4210-4220	Increased black shale, carbonaceous, somewhat fissile
4220-4240	Limestone, white, very chalky, no visible porosity;
4240-4280	Limestone, as above with interbedded limestone, cream, gray-white, microcrystalline, hard, dense, sandy in part; some thin sandstone, light gray, very fine grained, well cemented calcareous, slight trace glauconite, very finely divided; no visible porosity.
4280-4310	Limestone, white, cream, microcrystalline, slightly chalky in part, no visible porosity, sandy in part
4310-4320	Limestone, as above with trace tan, buff limestone, microcrystalline, hard, dense
4320-4330	Limestone, tan, buff, hard, dense
4330-4360	Limestone, tan, light brown fragments, fossiliferous, no visible porosity, some calcite infilling, few indistinct oolites; interbedded cream limestone, hard, dense.
4360-4370	As above with some sandstone, gray, well cemented, highly calcareous, very fine grained silt, no visible porosity; trace oocastic limestone, tan.
4370-4380	Limestone, tan, light brown, oocastic, good porosity, questionable permeability, no stain, spotty mineral fluorescence, no cut
4380-4400	Limestone, cream, tan, fossiliferous in part, fragmental in part, hard, dense, no visible porosity.
4400-4420	Limestone, gray, gray-brown, dark gray mottling, slightly sandy, hard, dense, some dark gray chert;
4420-4470	Limestone, as above, with interbedded limestone, tan, brown microcrystalline, hard, dense, fossiliferous; limestone, cream, tan, buff, microcrystalline, hard, dense, no visible porosity;
4470-4490	Limestone, tan, brown, slightly mottled, slightly chalky, fossiliferous, fragmental in part, fine crystalline, no visible porosity; some thin beds highly fossiliferous



- 4490-4510 Limestone, as above, with interbedded limestone, cream, tan, hard, dense; trace oolitic limestone, tan, poor to fair porosity, mostly infilled; no shows
- 4510-4560 Limestone, cream, tan, very fine crystalline, slightly fossiliferous, no visible porosity; thin interbeds of black carbonaceous shale
- 4560-4580 Limestone, as above, slightly more fossiliferous, trace oolitic limestone, infilled, tan; some interbedded gray brown limestone, trashy appearance.
- 4580-4610 Limestone, gray-brown, fragmental, hard, dense; interbedded limestone, as above; interbedded sandy shale, dark gray, limey.
- 4610-4630 As above, with sandstone, white, light gray, very fine grained, well sorted, calcareous, well cemented, no visible porosity.
- 4630-4700 Limestone, cream to tan, very fine microcrystalline, fossiliferous in part, chalky in part, occasionally fragmental, slightly oolitic in part; some interbedded argillaceous limestone, limey shale, gray, brown
- 4700-4720 Increasingly fragmental, fossiliferous limestone, tan, brown, trashy appearance, argillaceous, slightly chalky to very chalky.
- 4720-4750 Limestone, gray, gray-brown, very fine crystalline, argillaceous, silty appearance, no visible porosity; graduates to limey siltstone, silty shale, medium gray
- 4750-4790 Limestone, tan, light brown, lithographic, hard, dense, (Ft. Scott)
- 4790-4810 Siltstone, shale, dark gray, brown-gray, highly calcareous, interbedded limestone, dark brown, brown-gray, hard, dense.
- 4810-4840 Limestone, tan, microcrystalline, hard, dense; interbedded shale; and siltstone as above; few thin black carbonaceous shale beds.
- 4840-4860 Interbedded shale, siltstone and argillaceous limestone, gray, brown-gray; thin black carbonaceous shale beds common
- 4860-4900 Limestone, tan, fragmental, very fine microcrystalline, fossiliferous in part, some oolites, hard, dense, trace chert, translucent, mottled brown, gray, white (looks like agate), trace pyrite; interbedded black carbonaceous shale.
- 4900-4940 Limestone, interbedded light gray-brown, tan, brown buff, very fine microcrystalline, hard, dense, trace chert and pyrite, occasionally fossiliferous; interbedded black carbonaceous shale
- 4940-4960 Limestone, gray, microcrystalline, hard, dense; interbedded black carbonaceous shale
- 4960-4980 Limestone, gray, tan, brown gray, microcrystalline, hard dense, cherty in part (agate); interbedded shale, black carbonaceous, silty in part, thin siltstone lenses
- 4980-5000 Limestone, gray, gray white, very fine microcrystalline, hard, dense, slightly cherty; interbedded shale, as above.
- 5000-5020 Limestone and shale, as above; few pieces of dolitic limestone, brown, earthy, very poor porosity and permeability, spotty fluorescence, fair to good cut, brown stain;



- 5020-5080 Limestone, gray-brown, dark brown, microcrystalline, hard, dense, occasionally pyritic; interbedded black shale, carbonaceous, trace chert.
- 5080-5120 Limestone, cream, tan, very fine crystalline, hard, dense, no visible porosity, fossiliferous in part, interbedded limestone, and shale, as above
- 5120-5180 Shale, light to medium gray, green-gray, green, gray-green, soft; light gray and green shale, often glauconitic; very poor samples, mostly cavings
- 5180-5200 Limestone, tan, cream, very fine crystalline, no visible porosity; thin zones of oolitic beds, infilled; occasionally fragmental, fossiliferous, slightly chalky; interbedded shale, as above
- 5200-5220 Limestone, cream, tan, chalky, fossiliferous in part, no visible porosity; sandstone, brown, very limey, glauconitic, hard, no visible porosity, fine grained; interbedded shale as above.
- 5220-5260 Limestone, cream, tan, fossiliferous, oolitic in part, chalky in part, no visible porosity.
- Ran DST No. 1 4984-5016, straddle test. PTD 5260
- 5260-5270 Trip sample after DST - cavings; trace sandstone, white, fine grained, sub-angular, highly glauconitic, calcareous, well cemented.
- 5270-5280 Limestone, cream, chalky as above, becoming very sandy, detrital, chalky; some cream-tan, very sandy limestone, detrital, with trace oolites, no visible porosity.
- 5280-5310 Predominantly sandy limestone, cream, tan, oolic, slightly pritic, slightly cherty, cream, tan, brown, no visible porosity; few thin grains glauconitic shale beds; some interbedded tan, fragmental, oolic limestone, no visible porosity.
- 5310-5330 Limestone, tan, fossiliferous, oolic, sandy; some interbedded sandstone, tan, very limey, well cemented, poor porosity and permeability, very fine grained, well sorted; interbedded limestone, tan, brown, lithographic.
- 5330-5350 Dolomite, brown, tan, microcrystalline, occasionally micro-sucrosic, hard, dense, limey, no visible porosity; interbedded limestone, tan, as above
- 5350-5360 Interbedded dolomite and limestone as above, some interbedded brown-gray dolomite, very fine crystalline, micro-sucrosic, argillaceous
- 5360-5390 Predominantly limestone, tan, cream, brown, fossiliferous, sandy in part, oolic in part, with chert, white, translucent, brown, gray; trace very fine pyrite; some thin limey sandstone, cream, fine grained, tight.
- 5390-5410 As above, much white, semi-opaque chert, sharp, some brown speckled.
- 5410-5430 Dolomite, dark brown, gray-brown, brown-gray, very fine crystalline, sucrosic, argillaceous, limey, tan calcite inclusions, slightly mottled effect, no visible porosity, no shows; trace brown dolitic shale



5430-5440	Dolomite, as above, with limestone, light gray, gray-white, very chalky
5440-5450	Limestone, cream, white, gray-white, chalky, shaley.
5450-5460	Limestone, mottled gray, tan, white, fossiliferous, shaley, fragmental.
	Lost circulation @ 5473 - rough drilling @ 5468-72. Added 3800 gallons diesel to mud (20% oil in mud)
5460-5470	Very poor samples due to lost circulation
5470-5480	Samples still poor - appears to be limestone, tan, brown, fragmental in part, very fine crystalline in part; trace white translucent-opaque chert; no visible porosity; rough drilling apparently due to fracturing.
5480-5500	Limestone, tan, gray-brown, cream, fragmental, slightly mottled, chalky in part, fossiliferous in part; trace pin-point porosity, no show; trace chert, white translucent, opaque.
5500-5520	Limestone, gray, mottled, speckled, fragmental, chalky in part, cherty, with white and brown-gray, gray speckled chert; no visible porosity
5520-5530	As above with some white chert
5530-5540	As above, great increase in chert, white, translucent-opaque; interbedded limestone, cream, microcrystalline, hard, dense, cherty (white)
5540-5550	Limestone, cream, microcrystalline, hard, dense, slightly cherty (white, gray-white)
5550-5560	Limestone, as above, increased chert, white to light gray, translucent-opaque
5560-5570	Limestone, as above, cherty, with interbedded dolomite, cream, white, tan, very fine crystalline, micro-sucrosic
5570-5630	Interbedded chert and dolomite, chert, white, light gray, opaque, semi-translucent; dolomite, tan, cream, very fine to fine sucrosic; poor to fair porosity in streaks and poor permeability, no shows;
5630-5650	Chert, as above, interbedded dolomite, as above, occasional thin bed of limestone, white, cream, fossiliferous, no visible porosity, chalky
5650-5700	Predominantly limestone, white, cream, light gray-brown, fossiliferous, few oolic zones, no visible porosity, no shows; cherty, white, gray, some interbedded dolomite as above, decreasing toward base.
5700-5730	Dolomite, tan, light brown, very fine sucrosic, poor porosity and permeability.
5730-5750	Dolomite, as above, becoming darker in color, finely sucrosic; poor to fair porosity and permeability.
5750-5760	Dolomite, brown, finely sucrosic with interbedded coarse well rounded quartz grains, poorly sorted; poor porosity and permeability



DRILLER'S LOG

RECEIVED

AUG 14 1970

Bernal Wallace #20-1

COLO. OIL & GAS CONS. COMM.


Location: NE/4 NE/4  
Section 20-15S-42W  
Cheyenne County  
Operator: Webb Resources, Inc.  
Contractor: L & F Drilling, Inc.

Commenced: July 14, 1970  
Completed: July 29, 1970  
T. R. D.: 5,760' D & A

0'	300'	Shale & sand	Set 7 Jts. 282.15' 8-5/8"
300'	699'	Shale	Csg. @ 293' w/220 sx.
699'	1,551'	Shale & sand	Common w/3/4 Cal. Chl.
1,551'	2,010'	Shale	
2,010'	2,240'	Shale & shells	
2,240'	2,400'	Red Bed, shale & anhydrite	
2,400'	2,910'	Salt	
2,910'	3,110'	Shale & shells	
3,110'	3,270'	Shale, red bed & anhydrite	
3,270'	3,479'	Shale	
3,479'	3,601'	Shale & chalk	
3,601'	3,755'	Red bed and shale	
3,755'	3,837'	Lime	
3,837'	3,950'	Lime & shale	
3,950'	4,063'	Shale & lime	
4,063'	4,130'	Lime	
4,130'	4,240'	Shale & lime	
4,240'	4,320'	Lime & shale	
4,320'	4,389'	Lime	
4,389'	4,435'	Shale & lime	
4,435'	4,527'	Lime & shale	
4,527'	5,051'	Lime	
5,051'	5,080'	Lime & chert	
5,080'	5,114'	Lime & shale	
5,114'	5,150'	Shale	
5,150'	5,231'	Lime & shale	
5,231'	5,260'	Shale & sand	
5,260'	5,474'	Lime	
5,474'	5,532'	Lime, dolo. & chert	
5,532'	5,760' T.D.	Lime	


D & A

I certify that this is the true and correct copy of the  
above log to the best of my knowledge.

  
Kenneth G. Fischer  
Vice President

Subscribed and sworn to before me this third day of August,

1970.

  
Sherry Sprout  
Notary Public

Commission ending June 30, 1971.