

Well No. 8 Lease Gallegos Canyon Unit

Operator Benson & Montin

INTER
DRILLING AND COMPLETION RECORD

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(IN POCKET)

☒ ELECTRIC LOG SCALE
☐ " " SCALE
☐ RADIOACTIVE LOG SCALE
☐ " " SCALE
☒ SAMPLE LOG STRIP
☐ TEMPERATURE RECORD

WELL NO. 8 LEASE Gallegos Canyon Unit
 OPERATOR Benson & Montin

COMPLETION SUMMARY

SCHEDULE DATES		MONTH	DAY	YEAR	LOCATION DATA	
LOCATION					FORMATION	Dakota
WELL NO.		10	16	51	COMPLETED IN	
WELL NO.		10	18	51	FOUNDER	San Juan
WELL NO.		12	7	51	LOCAL	1065 FEET North of the South
WELL NO.		1	10	52	AND 890 FEET East of the West	
WELL NO.					SECTION	22 TOWNSHIP 28 N RANGE 12 W
WELL NO.					SECTION	5661
WELL NO.					SECTION	5666
WELL NO.					SECTION	5658

Completed in Dakota sand, open hole. 125 MCF wet gas

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1. *Introduction* 1

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| Part Name | Part Number | Part Number | Part Number |
|-----------|-------------|---------------------|-------------|
| Surf | 6188 | 1400 | 6188 |
| | | 800 | 6188 |
| | 6188 | 910 | 5955 |
| | 6103 | Electric | 5961 |

| DRILL SITE | | SUMMARY | |
|------------|----|-----------|-----------|
| DR | NO | FORMATION | FROM |
| 1 | | Tocito | 5377 5447 |
| 2 | | Dakota | 5490 6006 |
| 3 | | Dakota | 6006 6094 |

| CORE NO | FORMATION | CONV | 3905 | 3914 | FT. CORED | FT. PERC. | PERC. | PERC. |
|---------|---------------|------|------|------|-----------|------------------|-------|-------|
| 1 | Point Lookout | Conv | 3905 | 3914 | 9 | 9 | 100 | No |
| 2 | Point Lookout | Conv | 3951 | 3979 | 18 | 16 $\frac{1}{2}$ | 88.8 | No |
| 3 | Tocito | Conv | 5330 | 5385 | 5 | 4 $\frac{1}{2}$ | 90 | No |
| 4 | Dakota | Dia | 5934 | 6006 | 22 | 20.4 | 92.7 | No |
| 5 | Dakota | Dia | 6008 | 6047 | 39 | 39 | 100 | No |

| DATE | LOCATION | TRAIN | TIME | TYPE | WGT | WGT | COG. NO. | TAKE CO. | YES |
|--------|----------|-------|------|-----------|------|------|----------|----------|-----|
| 1/3/52 | Dakota | 6026 | 6103 | 300 solid | 6188 | 6103 | 5959 | No | Yes |

[illegible]

| | | | | | | | | | | | | |
|--------|------|---|-----|------------|-----|-------|-----|-----|------|---|---|----------|
| 13 3/8 | 95 | 3 | 48# | short H-40 | 8rd | 95' | 200 | Reg | Circ | | | |
| 9 5/8 | 910 | | 40# | short J-55 | 8rd | 910' | 405 | Reg | | 1 | | Larkin |
| 7 | 1533 | | 20# | short J-55 | 8rd | 5959' | | | | 4 | 4 | Weather- |
| 7 | 4294 | | 23# | short J-55 | 8rd | 4426' | 150 | Reg | | | | ford |
| 7 | 132 | | 26# | Long N-80 | 8rd | 132' | | | | | | |

| | | | | | |
|--------|------|-----|-------|------|------|
| 17 1/4 | Surf | 95 | 8 3/4 | 910 | 5959 |
| 12 1/2 | 95 | 910 | 6 1/8 | 5959 | 6188 |

Tubing 2 3/8 6053 207 Eve L.7 J-55 6064 Closed
4' Perf. nipple

13 3/8" Ser 400 Rector 9 5/8 Ser 400 Rector 7" Ser 600 Rector
Series 600 Rector 2 mission 2000# valves

INDIVIDUAL WELL GEOLOGICAL SUMMARY

WELL NO. 8 LEASE Gallegos Canyon Unit
 OPERATOR Benson & Montin
 REC Wildcat
 COUNTY San Juan
 STATE New Mexico

ELEVATION K.B. 5663

GEOLOGIST Joe Lilly ADDRESS Farmington, New Mexico

| FORMATION | | DEPTH TO TOP | | ELEVATION ON SURFACE | |
|-----------------|--|--------------|-----------------|----------------------|-----------------|
| | | FEET | EL. OR D.A. LOG | SAMPLES | EL. OR D.A. LOG |
| Pictured Cliffs | | 1125 | | 4238 | |
| Lewis | | 1540 | | 4123 | |
| Cliff House | | 2955 | | 2708 | |
| Menafee | | 3030 | | 2633 | |
| Mancos | | 4150 | | 1513 | |
| Tocito | | 5370 | | 293 | |
| Greenhorn Lm. | | 5855 | | 192 | |
| Ganeros Shale | | 5910 | | 274 | |
| Dakota | | 5950 | | 287 | |

UNKNOWN OIL, GAS AND WATER BEARING DATA NEEDING LOG

| FORMATION | LOG | FEET | EL. OR D.A. LOG |
|-----------------|-----|------|-----------------|
| Pictured Cliffs | G | 1125 | 1543 |
| Point Lookout | G | 3945 | 3961 |
| Tocito | G | 5370 | 5440 |
| Dakota | G | 5950 | |

TYPE REPER. LOGS

FORMATION

EL. OR D.A. LOG

FEET

EL. OR D.A. LOG

RELATIVE POSITION (RELATIVE TO DEPTH OR SIGNIFICANT POINT)

From regional standpoint test checked neither high nor low. From structural standpoint test was normal. No subsurface structure is indicated in the area on the top of the Dakota formation.

COMPLETION DATA (WELL, CEMENT, AND TESTS) (GAIN)

Set 7" pipe 10' in Dakota formation. Diamond cored to Basal Dakota, 6188', plug back to 6103.

It is questionable if the Dakota formation will prove to be a commercial oil or gas producing zone. A small well might be made from 5959-6020 after shooting the zone with nitro-glycerin.

Table 1. Mean values of the variables measured during the 60-min test

| | Mean ± SD |
|--|------------|
| Heart rate (beats min ⁻¹) | 178 ± 19 |
| Stroke volume (L) | 100 ± 15 |
| Cardiac output (L min ⁻¹) | 17.8 ± 2.5 |
| Systolic blood pressure (mmHg) | 160 ± 15 |
| Diastolic blood pressure (mmHg) | 95 ± 10 |
| Mean arterial pressure (mmHg) | 105 ± 10 |
| Respiratory minute ventilation (L min ⁻¹) | 100 ± 15 |
| Oxygen consumption (L min ⁻¹) | 2.5 ± 0.5 |
| Ventilatory equivalent (ratio) | 40 ± 5 |
| Arterial oxygen saturation (%) | 98 ± 2 |
| Lactate concentration (mmol L ⁻¹) | 2.5 ± 0.5 |
| Blood glucose concentration (mmol L ⁻¹) | 5.5 ± 0.5 |
| Plasma insulin concentration (mU L ⁻¹) | 1.5 ± 0.5 |
| Free fatty acid concentration (mmol L ⁻¹) | 0.5 ± 0.1 |
| Cortisol concentration (nmol L ⁻¹) | 1.5 ± 0.5 |
| Growth hormone concentration (ng L ⁻¹) | 1.5 ± 0.5 |
| Prolactin concentration (ng mL ⁻¹) | 1.5 ± 0.5 |
| Testosterone concentration (nmol L ⁻¹) | 1.5 ± 0.5 |
| Progesterone concentration (nmol L ⁻¹) | 1.5 ± 0.5 |
| Dehydroepiandrosterone sulfate concentration (nmol L ⁻¹) | 1.5 ± 0.5 |
| Dehydroepiandrosterone concentration (nmol L ⁻¹) | 1.5 ± 0.5 |
| DHEA/DHEAS ratio | 0.5 ± 0.1 |

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WELL NO. 8 LEASE Callegos Canyon Unit

OPERATOR Benson & Montin

WELL DRILLING AND COMPLETION HISTORY

| DATE | REMARKS |
|----------|--|
| 10-18-51 | Spudded. Reamed 17 $\frac{1}{4}$ " hole. |
| 10-19-51 | Set 13-3/8 H 40 48# at 95' with 200 sx |
| 10-21-51 | Drilling at 276' |
| 10-22-51 | Drilling at 632' |
| 10-23-51 | Set 9 5/8 at 910' with 155 sx |
| 10-24-51 | 8 hours after plug down, well blew out behind pipe. Pumped 300 mud and 250 sx cement through bradenhead. |
| 10-27-51 | Drilling 1600' shale |
| 10-29-51 | Drilling 2514' in sand and shale |
| 10-30-51 | Drilling at 2745' in Lewis shale |
| 10-31-51 | Drilling at 2900' in sand and shale - Lewis |
| 11-1-51 | Drilling at 3088' |
| 11-2-51 | Drilling at 3277' in Menefee |
| 11-3-51 | Drilling at 3418' sand and shale |
| 11-4-51 | Drilling at 3690' |
| 11-5-51 | Cored 3905-14. Recovered 9' hard shale and sand. No shows. |
| 11-6-51 | Cored 3914-35' sand and shale |
| 11-7-51 | Cored 3961-79'. Recovered 16 $\frac{1}{2}$ ' light gray fine vericolored micaceous compact hard sandstone. No odor. No florescence. Point Lookout Sand. Drilling at 4040'. |
| 11-8-51 | Drilling at 4220' in shale |
| 11-10-51 | Drilling at 4490' in shale |
| 11-12-51 | Drilling at 4760' in Mancos Shale |
| 11-13-51 | Drilling at 4920' in Mancos Shale |
| 11-14-51 | Drilling at 5056' in Mancos Shale |
| 11-15-51 | Drilling at 5205' in sand and shale |
| 11-16-51 | Circulating for samples at 5351' |

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WELL NO. 8 LEASE Gallegos Canyon UnitOPERATOR Benson & Montin

WELL DRILLING AND COMPLETION HISTORY

| DATE | REMARKS |
|----------|---|
| 11-17-51 | Cored 5380-85'. Recovered 4 $\frac{1}{2}$ ' black shale with thin very fine sand streaks, slight gas bleed, good oil odor and oil stain in sand and shale. Abundant fossil fragments. Sample 5400-05'. 75% fine hard sand with good florescence and oil, 25% black shale. T.D. 5410'. |
| 11-18-51 | Lost circulation at 5415' and 5425-30. Drill stem test 5377 to 5447 open 1 hour. Good blow. Gas to surface 35 minutes, estimated 50 MCF. Recovered 1100' drilling mud, slightly gas cut. B.H.F.P. 450-500 B.H.S.I.P. 30 minutes 2250#. |
| 11-19-51 | Drilling at 5521' in fine sandy shale |
| 11-20-51 | Drilling at 5620' in sandy shale |
| 11-21-51 | Drilling at 5700' |
| 11-22-51 | Drilling at 5830' in sandy shale |
| 11-23-51 | Drilling at 5942 in sandy shale |
| 11-24-51 | Ran Schlumberger to T.D. 5959' |
| 11-25-51 | Set 7" casing at 5959' with 150 sx cement |
| 11-28-51 | Drilled plug. Tested casing. Changed mud; coring. |
| 11-29-51 | Coring |
| 11-30-51 | Drilled 5959-84'. Core #4 5984-6006' (22') recovered 20.4' fine hard tightly compacted sandstone. Drill stem test with hookwall packer at 5950'. Open 30 minutes. No blow. Pulling tool to determine if plugged. |
| 12-1-51 | Drill stem test (second run). Hookwall packer set at 5940'. T.D. 6006'. Immediate blow estimated at 100 MCF, decreased to 20 MCF in 10 minutes. Gas to surface in 20 minutes, continued blow of 20 MCF gas. Pulling tool. |
| 12-2-51 | Left 2 packer rubbers in hole after taking drill stem test. Reamed and drilled 6 $\frac{1}{4}$ " hole to 6008' with rock bit. Started core #5 at 6008' |
| 12-3-51 | Core #5 6008-47' (39') recovered 39' |
| 12-4-51 | Core #6 6047-94' full recovery |
| 12-5-51 | Drill stem test. 6006-94' open 45 minutes. Gas in 15 min. Recovered 60' gas cut mud. B.H.F.P. 125# B.H.S.I.P. 1425# 30 min. Coring at 6100' |
| 12-6-51 | Pulled core #7. Coring at 6145'. |

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WELL NO. 8 LEASE Gallegos Canyon Unit

OPERATOR Benson & Montin

WELL DRILLING AND COMPLETION HISTORY

| DATE | |
|----------|---|
| 12-7-51 | Cored 6142-6188'. Top 12 feet sand, shale and coal. Remainder sand carrying water. Ran Schlumberger T.D. 6188' |
| 12-8-51 | Displaced mud with water. Shut down |
| 12-23-51 | Cable tools moved in. |
| 12-24-51 | Cable tools rigging up |
| 12-25-51 | Shut down for Christmas |
| 12-26-51 | Running tubing |
| 12-27-51 | Spotted 25 sx cement on bottom to plug off basal Dakota sand carrying water. Pulled tubing |
| 12-28-51 | Waiting on cement |
| 12-30-51 | Swabbing load water from hole |
| 12-31-51 | Failed hole down. 12 hour fill up test - 1 barrel mud, fresh water and oil. 2 hour fill up test - 1/4 bbl oil. Drilling out cement - top at 6025' |
| 1-1-52 | Plugged back to 6103. Cleaning out. 130 MCF |
| 1-2-52 | Preparing to shoot |
| 1-3-52 | Shot 6026 to 6103' with 300 qts SNG. Seven hours after shot well gauged 290 MCF. Tools hung up at 5959' (shoe) Prep to run casing swage |
| 1-4-52 | Fishing for tools lost at 6070' after swaging out casing and cleaning out from 6025-6070' |
| 1-5-52 | Recovered tools. Cleaning out at 6060'. Measured 170 MCF |
| 1-6-52 | Cleaning out at 6060'. Hole caving |
| 1-7-52 | Cleaning out at 6030' Hole caving |
| 1-8-52 | Cleaning out at 6090' |
| 1-9-52 | Cleaned out to T.D. 6103'. Running tubing |
| 1-10-52 | Ran tubing to 6064'. Measured 125 MCF 8 days after shot. Shut in |

DRILL! STEM TEST SUMMARY

| DST NO. | FORMATION | DEPT FROM - TO | BHC | THC | BLANKET | SIZE D. P. | RECOVERY IN PIPE | | | | PRESSURES | | TIME SI | REMARKS
(GAS VOLUME, GOR,
OIL FLOW, ETC.) |
|---------|-----------|----------------|-----|-----|---------|------------|------------------|-------|-------|-----------------|-----------|------|--------------|---|
| | | | | | | | CIL | WATER | OTHER | FLOWING SURFACE | FBH | SIBH | | |
| 1 | Tocito | 5377-5447 | | | | 4 1/2 | 1 hr | | | 1100' drlg mud | 450 | 2250 | 30 min | Est. 50 MCF gas |
| 2 | Dakota | 5950-6006 | | | | 3 1/2 | 30 min | | | Plugged | | | | |
| | 2nd run | 5940-6006 | | 1" | | 3 1/2 | 2 hr | | | 300' O & GCM | | | not recorded | Est. 20 MCF gas |
| 3 | Dakota | 6006-6094' | | | | 3 1/2 | 45 min | | | 60 GCM | 125 | 1425 | 30 min | |

DST SUMMARY

توضیح: در این جدول، α و β به ترتیب ضرایب α و β در مدل هستند.

