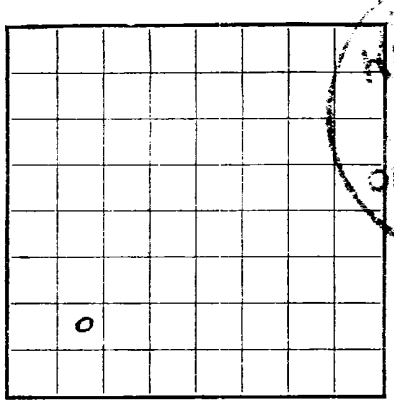
Form 9-330

Budget Bureau No. 42-R355.4.
Approval expires 12-31-60.

U. S. Land Office Santa Fe
Serial Number NMOI 5014
Lease or Permit to Prospect



LOCATE WELL CORRECTLY

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

# LOG OF OIL OR GAS WELL

Company Kern County Land Company Address 301 Korber Bldg., Albuquerque, N.M.

Lessor or Tract Federal - McKenzie Field Wildcat State New Mexico

Well No. 1 Sec. 25 T. 25 R. 6 Meridian NMPM County Rio Arriba

Location 990 ft. {N. / S} of S Line and 890 ft. {E. / W} of W Line of Section 25 Elevation 6690 KB
(Derrick floor relative to sea level)

The information given herewith is a complete and correct record of the well and all work done thereon so far as can be determined from all available records.

Signed E. F. Butchwell

Date June 16, 1959 Title Mgr. Oil Dev. & Engr.

The summary on this page is for the condition of the well at above date.

Commenced drilling April 23, 19 59 Finished drilling May 14, 19 59

## OIL OR GAS SANDS OR ZONES

*(Denote gas by G)*

No. 1, from G 2573 to 2590 No. 4, from 5888 to 6050

No. 2, from G 3409 to 3540 No. 5, from G 6906 to 7010

No. 3, from G 4132 to 4150 No. 6, from ____ to ____

## IMPORTANT WATER SANDS

No. 1, from ____ to ____ No. 3, from ____ to ____

No. 2, from ____ to ____ No. 4, from ____ to ____

## CASING RECORD

| Size casing | Weight per foot | Threads per inch | Make | Amount | Kind of shoe | Cut and pulled from | Perforated From— | Perforated To— | Purpose |
|---|---|---|---|---|---|---|---|---|---|
| 10 3/4 | 32 | 8 | CF&I | 341 | Open guide | - | | | Surface |
| 5 1/2 | 15.5 & 17 | 8 | CF&I | 7140 | Open Kurie | - | 6907 | 6914 | Production |
| | | | | | | | 6960 | 6974 | |
| | | | | | | | 7000 | 7008 | |
| 2 | 4.70 | 8 | CF&I | 6959 | - | - | 6947 | 6959 | Production |

## MUDDING AND CEMENTING RECORD

| Size casing | Where set | Number sacks of cement | Method used | Mud gravity | Amount of mud used |
|---|---|---|---|---|---|
| 10 3/4 | 341 | 325 | Circulate | - | Circulated to surface |
| 5 1/2 | 7140 | 425 | 1st Stage | Water | Displaced casing |
| 5 1/2 | 3611 | 100 | 2nd Stage | Water | Displaced to stage/ collar |

## PLUGS AND ADAPTERS

Heaving plug—Material ____ Length ____ Depth set ____

Adapters—Material ____ Size ____

## SHOOTING RECORD

| Size | Shell used | Explosive used | Quantity | Date | Depth shot | Depth cleaned out |
|---|---|---|---|---|---|---|
| | | | | | | |
| | | | | | | |
| | | | | | | |

## TOOLS USED

Rotary tools were used from 0 feet to 7140 feet, and from ____ feet to ____ feet

Cable tools were used from ____ feet to ____ feet, and from ____ feet to ____ feet

## DATES

June 16, 19 59 Put to producing June 3, 19 59

The production for the first 24 hours was 18 barrels of fluid of which 100% was oil; ____% emulsion; ____% water; and ____% sediment. Gravity, °Bé. ____

If gas well, cu. ft. per 24 hours 180,000 Gallons gasoline per 1,000 cu. ft. of gas ____

Rock pressure, lbs. per sq. in. 3,500

## EMPLOYEES

J. L. Thacker, Driller E. R. Horton, Driller

W. H. Lawrence, Driller M. Lawrence, Driller

## FORMATION RECORD

| FROM— | TO— | TOTAL FEET | FORMATION |
|---|---|---|---|
| 340 | 540 | 200 | Sand |
| 540 | 600 | 60 | Shale |
| 600 | 618 | 18 | Sand |
| 618 | 700 | 82 | Shale |
| 700 | 720 | 20 | Sand |
| 720 | 885 | 165 | Shale |
| 885 | 1190 | 305 | Sand and shale |
| 1190 | 1330 | 140 | Shale |
| 1330 | 1570 | 240 | Sand and shale |
| 1570 | 1740 | 170 | Shale |
| 1740 | 2210 | 470 | Sand and shale |
| 2210 | 2570 | 360 | Shale |
| 2570 | 2600 | 30 | Sand |
| 2600 | 3410 | 810 | Shale |
| 3410 | 3550 | 140 | Sand and shale |
| 3550 | 4130 | 580 | Shale |
| 4130 | 4910 | 780 | Sand and shale |
| 4910 | 5880 | 970 | Shale |
| 5880 | 6100 | 220 | Sand and shale |
| 6100 | 6905 | 805 | Shale |
| 6905 | 7140 | 235 | Sand and shale |

(OVER)

16—43094-4

PLEASE SEE BACK ATTACHED SHEET FOR FORMATION TOPS.

FOLD | MARK

## FORMATION RECORD—Continued

| FROM— | TO— | TOTAL FEET | FORMATION |
|---|---|---|---|
| | | | |

16—43094-2 U. S. GOVERNMENT PRINTING OFFICE

## HISTORY OF OIL OR GAS WELL

**It is of the greatest importance to have a complete history of the well. Please state in detail the dates of redrilling, together with the reasons for the work and its results. If there were any changes made in the casing, state fully, and if any casing was "sidetracked" or left in the well, give its size and location. If the well has been dynamited, give date, size, position, and number of shots. If plugs or bridges were put in to test for water, state kind of material used, position, and results of pumping or bailing.**

**See Attachment.**

# HISTORY OF OIL OR GAS WELL

KCL Federal No. 1

4/21/59 RURT

4/22/59 RURT

4/23/59 RURT. Drill rat and mouse hole. Spud 4:00 A.M. Drill 15" hole to 342'. Set 341' 10 3/4" 32# H-40 casing. Cemented with 325 sacks plus 2% $CaCl_2$. Plug down 3:00 P.M. Good cement returns to surface. Released pressure at 7:00 P.M.

4/24/59 Install BOP. Pressure test 1000# 30 min. OK. Top cement 316'. WOC 24 hrs. Drill out 3:00 P.M. Drill 8 3/4" hole. Drilling 1349'. Bit #1 8 3/4" 342-1219.

4/25/59 Drilling 2540'. 1/2° @ 1561', 2140'.
9.3# 36 vis. 8.5 ph.
Bit #2 8 3/4" 1219-2418 10 1/2 hrs.

4/26/59 Drilling 3374'. 1/2° 2620, 3/4° 3290.
9.4# 42 vis. 12.5 cc.
Bit #3 2418-3290. 15 hrs.

4/27/59 Drilling 3714'. 1° 3500, 1 1/2° 3714.
10.1# 44 vis. 4.8 cc. 2/32" 10.2 ph.
Bit #4 3290-3528 9 hrs.
Bit #5 3528-3714 12 1/4 hrs.

4/28/59 Drilling 4025'. 1° 3910'.
10# 61 vis.
Bit #6 3714-3924 10 1/2 hrs.

4/29/59 Drilling 4375'. 10.1# 41 vis 9/32" 9.7 ph.
Bit #7 3924-4096 13 1/4 hrs.

4/30/59 Drilling 4779'. 1 1/4° 4370.
9.9# 49 vis. 7.6 cc. 2/32 10.5 ph.
Bit #8 4090-4386 14 1/4 hrs.
Bit #9 4386-4670 10 hrs.

5/1/59 Drilling 5182'. 9.8# 48 vis.
Bit #10 4670-5019 14 1/4 hrs.

5/2/59 Drilling 5566'. 1° 5295
10.1# 48 vis.
Bit #11 5019-5297 16 hrs.

5/3/59 Drilling 5856 1/2° 5630
10.1# 54 vis. 5.2 cc.
Bit #12 5297-5631 15 1/2 hrs.
Bit #13 5631-5856 15 1/2 hrs.

5/4/59 Prep to D.S.T. TD 6061. Conditioned hole, 2 hrs.
Bit #14 5856-6061 16 1/4 hrs.
10.1# 100 vis. 5.8 cc. 2/32

5/5/59 Drilling 6167'
D.S.T. #1 5920-6061. Halliburton tools. Circ. sub, jars, safety jt. 2-7 1/2" pkrs. Bottom pkr. @ 5920. 2 hr. test. 1 hr. initial SI. Open tool 3:01 A.M. Initial strong blow; decreasing to fair after 12 min. Steady fair-strong blow thruout test. Closed tool 5:01 A.M. for 1 hr. buildup. Rec. 540' gas cut mud. IHSP 3210, FHSP 3178, ISIP 2975, FSIP 2230, IFP 255, FFP 350, 10.1# 70 vis.

5/6/59 Prep. to drill TD 6260. E-log. #1 surface to 6260.
D.S.T. #2 6111-6260. Halliburton tools, circ. sub, jars, safety jt. 2-7 1/2" pkrs. Bottom pkr @ 6111. 1 1/2 hrs. test, 1 hr. initial S.I. Weak blow thruout test. Died in 30 min. Rec. 30' mud.
IHSP 3255, FHSP 3240, ISIP 110, FSIP 95. IFP 95, FFP 95
10.1# 100 vis. 6.2 cc. 2/32, 9 ph.
Bit #15 6061-6260 17 1/2 hrs.

5/7/59 Drilling 6507'. 9.9# 52 vis.
Bit #16 6260-6507 17 1/2 hrs.

5/8/59 Drilling 6793'. 9.8# 58 vis. 6 cc. 2/32 12 ph.
Bit #17 6507-6793

5/9/59 Coring 6905'. TD 6905. Core #1 6905 - 1° @ 6793.
9.8# 69 vis. 6.4 cc. 3/32, 10.5 ph.
Bit #18 6793-6905 13 1/4 hrs.

5/10/59 Coring 6941'. Twisted off leaving core bbl., 18 jts. drill pipe and 21 jts. drill collars. Recovered fish with overshot. Core #1 - 7 3/4' Diamond. 10.1#, 105 vis., 5.2 cc., 2/32

5/11/59 6956'. Core #1 6905-6956. Rec. 51'. 12 hrs.
10.1#, 118 vis., 5.4 cc., 2/32. Pump down for repairs.

5/12/59 6989'. Core #2 6956-6989. Rec. 33'. 9 hrs. 15 min.
10#, 110 vis., 5.9 cc., 2/32

5/13/59 Drilling 7035'. D.S.T. #3 6833-6989. Halliburton tools, Tool open 4:45 A.M. Gas to surface in 3 1/2 min. Steady fair blow thruout test. Gauged gas rate 50,000 cfpd. Tool closed 6:45 A.M. 1 hr. initial S.I. and 1 hr. final S.I. Rec. 150' gas cut mud. IHSP 3635, FHSP 3605, ISIP 1250, FSIP 1155, IFP 105, FFP 155

5/14/59 TD 7140'. Drilled to final TD 7140'. Circ. for E-log.
9.7#, 61 vis., 6.4 cc., 9.9#, 123 vis.
Bit #19 6989-7044. 7 7/8' 11 1/4 hrs.
Bit #20 7044-7140. 11 3/4 hrs.

5/15/59 TD 7140'. Ran Schlumberger ES-Induction log #2. Ran Schlumberger Sonic log. D.S.T. #4 7024-7140. Halliburton tools. 1 hr. initial S.I. Tool open 12:48 P.M. Very faint blow. Died in 1 hr. 1 1/2 hr. test. Tool closed 2:18 P.M. for 30 min. S.I. Rec. 30' drlg. mud. IHSP 3730#, FHSP 3700# ISIP 1970#, FSIP 190#, IFP 95#, FFP 95#.

5/16/59 TD 7140'. Laid down 4 1/2' drill pipe. Ran 218 jts., 7145.19' casing as follows:

| | |
|---|---|
| 1 - Baker Guide shoe | 1.33 ft. |
| 1 jt - J-55 5 1/2" 17.0# | 33.35 |
| 1 - Baker Flexiflow collar | 1.48 |
| 11 jts - J-55 5 1/2' 17.0# | 363.30 |
| 95 jts - J-55 5 1/2' 15.5# | 3134.43 |
| 1 - Baker Stage collar | 1.80 |
| 110 jts - J-55 5 1/2' 15.5# | 3576.84 |
| 1 jt. - J-55 5 1/2' 12.0# | 32.66 |
| | 7145.19 ft. |

Casing set at 7140'.
Baker Dual Stage cement collar set at 3611.30'. Cemented 1st stage with 425 sacks regular cement. Preceded cement with 20 lbs. water. Displaced cement with water. Plug down at 2:40 P.M. Good returns during cementing. Pressure tested to 1000#. Float collar would not hold. Pressured up to 1000# and shut in at head for 6 hrs. Ran temperature survey after 6 hrs. Solid cement at 7083'. Top of cement outside casing located at 5600'. Tripped plug and cemented 2nd stage with 100 sacks regular cement. Plug down at 11:00 P.M. Good returns during cementing. Pressure tested to 1000# for 30 mins. O.K. Bled pressure back to 200# and shut-in head.

5/17/59 TD 7140'. Released pressure at 10:00 A.M. Ran temperature survey. Located top of cement at 3300'. Solid cement inside casing 3591. Installed casing head and landed casing. Drilled out stage collar at 8:30 P.M.

5/18/59 TD 7140' TD 7094. Tested casing to 1000# for 30 min. O.K. Spotted 300 gals. mud acid on bottom. Ran correlation log and

collar locator 5800-7094. Jet perforated 4 holes/ft. 6907-6916, 6960-6974, 7000-7008. Ran Baker Model C packer. Slips set @ 5 stands, pulled packer in two. Ran overshot and recover packer. Ran and set Baker Model C packer @ 6970. Squeezed acid in formation. Formation broke down at 2800#. Displaced acid with 7 bbls. of water. Shut in to let pressure bleed off. Started swabbing.

5/19/59 TD 7140 PD 7094. Swabbed well dry. Made small volume gas. Too small to measure. Unset packer and loaded hole with oil. Attempted to frac well. Dowell equipment. 5 Allison pump trucks, 2 blenders. Frac oil 41° Gallup crude. Pumped 80 bbls. to fill hole and lines. Started frac treatment. Pumped at 40 bbl. per min. rate for 3 min. Started sand. Pressure increased from 3000 psi to 3500 psi. Leak developed in BOP. Shut down pumps after pumping 120 bbls. oil and 5000# sand. Sand - oil ratio 1 #1 gal. Flushed lines with 80 bbls. oil. Back flowed well to reduce pressure.

5/20/59 TD 7140 PD 7094. Well commenced flowing load oil. Initial rate 5 B/hr. Final rate 40 B/hr. through 15/64" choke. Flow pressure 1200#. Well went to gas S.I. Pressure increased to 2000# on rams after 2 hrs. Pumped 150 bbls. 41° crude in well. Oil went away @ 3400#. Pressure on rams built up to 1400# after 1 hr. S.I. Mixed 210 bbls. 9.3# Dowell Workover Oil-Base Mud. Pumped 210 bbls. in well @ 2100#. Well would still back flow. S.I. Pressure on rams increased to 1450# in 1 hr.

5/21/59 TD 7140 PD 7094. After 8 hr. S.I. ram pressure had decreased to 800#. Bled off pressure. Well continued to back flow. S.I. Pressure on rams would build up to 200# in 20 mins. Mixed 170 bbls. 10# Baroid mud plus 3 sacks Driscose. Displaced Dowell Workover Mud.

5/22/59 TD 7140 PD 7094. Circulated mud 21 hrs. waiting on tubing. Laid down drill pipe.

5/23/59 TD 7140 PD 7094. Ran 219 jts. of 2 3/8" J-55 EVE 4.70# tubing, hung at 6973'. Tubing as run.

| | |
|---|---|
| 2 jts. perforated nipple & pinned collar | 12.00' |
| 219 jts. - J-55 2 3/8" 4.70# EVE | 6946.61 |
| Kelly Bushing to ground | 14.00 |
| Tubing @ | 6792.61' |

Displaced mud with 41° crude. Well commenced back flowing at very low rate. If shut-in pressure would build up on tubing to 400 psi in 1 hr. Continued to back flow waiting on swab unit.

5/24/59 TD 7140 PD 7094. Back flowing well waiting on swab unit.

5/25/59 TD 7140 PD 7094. Flowed and swabbed load oil. Swabbed well dry.

5/26/59 TD 7140 PD 7094. Spotted 27 bbls. Dowell emulsion breaker. Displaced at 2.4 bbls. per min. @ 2500#. Back flowed 32.4 bbls. in 6 hours. Swabbed and flowed 100 bbls. in 7 1/2 hours. Recovered a total of 132 bbls. out of 150 bbls. pumped. Ran Blank Otis choke in tubing.

5/27/59 TD 7140 PD 7094. Pulled tubing, reran with packer. Well blew out and flowed wild 1 hour. Controlled. Ran tubing to bottom with packer.

5/28/59 TD 7140-PD 7094. Set Baker packer @ 6877. Pressured up annulus to 2200#. Fraced down tubing with Dowell equipment. Pumped 405 barrels 41° oil and 4200# sand plus 1650# Adomite at 8 bbls. per min. rate and 5500 psi. Pumps failed after 1 hr. 5 mins. Swabbed 100 bbls. Frac oil in 24 hours. Good gas

blow during swabbing. No gas or oil after 24 hours. Total oil recovery 105 bbls. out of 405 bbls. used.

5/29/59 TD 7140 PD 7094. Reperforated with 4 holes per foot 6907-16, 6960-74, 7000-08 with 124 superdynajets. Ran tubing to bottom. Set packer at 6868, Otis CJ plug 6872. Retrieved plug with wire line. Flanged up Xmas tree.

5/30/59 TD 7140 PD 7094. Pressured annulus to 1900#. Fraced down tubing with Halliburton equipment. Pumped 610 bbls. 41° oil and 15000# sand in 1 hour 53 mins. at 5300-5500#. Ave. rate 7.3 bbls. per minute. for 1st hour. Pumped in 120 frac balls in 1st hour. Pressure increased to 5500#. Decreased injection rate to 6 bbls. per minute. Injected a total of 280 frac balls. Inection rate constant at 6 bbls. per minute for 53 minutes. Shut-in pressure 2600#. Bled off to 1900 #. Flowed well for 10 hours. Flow line plugged with frac balls. Tubing pressure build up 400# in 45 minutes.

5/31/59 TD 7140 PD 7094. Swabbed and flowed frac oil 210 bbls. in 16 1/2 hours. Flowing at 5 B/hr. rate.

6/1/59 TD 7140 PD 7094. Flowing load oil. Recovered 38 bbls. in 24 hours. Total recovery now 248 bbls. out of 1000 bbls. total.

6/2/59 TD 7140 PD 7094. Flowing load oil.

6/3/59 TD 7140 PD 7094. Rig released 8:00 A.M. Flowing load oil. Ave. rate 15-20 bbls. per day. 180 MCFPD. 1/2" choke 100# TP.

## FORMATION TOPS

| | |
|---|---|
| Pictured Cliffs | 2573 |
| Chacra | 3409 |
| Cliff House | 4132 |
| Menefee | 4217 |
| Point Lookout | 4780 |
| Mancos | 4909 |
| Gallup | 5888 |
| Lower Gallup | 6103 |
| Greenhorn | 6720 |
| Graneros | 6775 |
| 1st Dakota | 6827 |
| 2nd Dakota | 6906 |
| 3rd Dakota | 6984 |
| 4th Dakota | 7072 |
| TD | 7140 |