A REPORT OF ALL CORES, DRILL STEM TESTS AND PRODUCTION TESTS ON THE RICHARDSON AND BASS #1 FEDERAL LEGG, 660' FROM THE NORTH LINE AND 2003' FROM THE EAST LINE OF SECTION 27, TOWNSHIP 22 SOUTH, RANGE 30 EAST, EDDY COUNTY, NEW MEXICO. ELEVATION 3309' D. F.

THE WELL WAS SPUDDED 7-10-53 AND COMPLETED 5-11-54. THE TOTAL DEPTH BY THE DRILLER WAS 15,854'. THE WELL WAS COMPLETED AT A PLUG BACK DEPTH OF 6122' THROUGH PERFS. 6112' TO 6118' IN THE LOWER DELAWARE SAND.

THE REPORT WAS MADE POSSIBLE THROUGH THE COURTESY OF RICHARDSON AND BASS, CARLSBAD, NEW MEXICO.

THE TYPING OF THIS REPORT AND THE PAPER AND REPRODUCTION WAS FURNISHED BY THE NEW MEXICO OIL CONSERVATION COMMISSION, ARTESIA AND HOBBS, NEW MEXICO.

THE REPORT WAS PREPARED FOR THE NEW MEXICO OIL SCOUTS ASSOCIATION BY BOB BOLING, THE SUPERIOR OIL COMPANY, ROSWELL, NEW MEXICO, AND L. A. HANSON, NEW MEXICO OIL CONSERVATION COMMISSION, ARTESIA, NEW MEXICO.

Diamond Core #1 3764-3814. cut 50' recovered 45' being 2' lime, drk brn, fn xln, dns, v argill & sdy, no poro & NS. 7' sd, gry, v f g to silty, very tight, sli calc to argill, thinly laminated w/sh strks, no poro & NS. 2' sh, drk gry to blk, dns, very sdy, no poro & NS. 3' sd, gry, v f g, silty, tight, sli calc, very argill & laminated, no poro, no show. 2' sh, drk gry to blk, very calc & silty, no poro, no show. 4' lime, lt tan, very dns, sub-xln to massive w/conchoidal frac, no poro, no show. 1' sh, blk, dns w/conchoidal frac, sli calc, no poro, no show. 4' lime as above, no poro, no show. 3' sd, lt gry, v f g to silty, very tight, no poro, no show. 4' lime, brn, dns, fn xln to sdy, no poro, no show. 17' sd, as above, no poro, no show. 1' lost core.
DIP: Good, flat in laminations 3766 to 3778.

Diamond Core #2 3814-3864. cut 50' and recovered 20' being 3' sd, lt gry v f g, sli calc, tight, sli silty, no poro, no show. 17' sd as above except sli friable to friable. 20' lost core.
NOTE: No recognized dip.

Diamond Core #3 3864-3887. cut 23' recovered 22' being 11' sd, gry, v f g - dns, hd, sli calc, very tight, silty, argill, no poro, no show. 11' sd, v f g, dns, sli calc, tight to sli friable, no poro, no show. 1' lost core.
NOTE: No recognizable dip.

Diamond Core #4 6067-6116. cut 50' recovered 50' being 3' sd, gry, fn to med grained, silty, sli calc, very tight poro, tr stain, fair spotted fluor, light cut and fair odor. 1' sd, gry, fn to med grained, very silty, sli calc, very tight poro, no show. 1' sd as above except light stain, gd fluor, fair cut and good odor. 1' sd, gry, fn grained, very silty, w/paper thin shale lamin, very tight poro, no stain, tr fluor and cut, light odor. 1' sd, gry, fn to med grained, silty, sli calc, tight poro, light stain, gd fluor, fair cut and gd odor. 1' sd, gry fn-med grained, silty, shaley, sli calc, very tight poro, no show. 1' sd as above, w/sct thin sh lamin. very tight poro, no stain, tr fluor & cut, light odor. 3' sd, gry to drk gry, fn grained, very shaley, silty calc, very tight, poro, no show. 1' sd, gry, fn-med grained, very silty, sli calc, tight poro, light stain, fair fluor, tr cut, and fair odor. 1' sd as above except good fluor, fair cut and excellent odor. 5' sd, gry to drk gry, fn to med grained, very silty, very shaley, very tight poro, no show. 1' sd, gry, fn to med grained, silty & shaley, bleeding saltwater, tight poro, no show. 24' sd, gry to drk gry, fn to med grained, very silty to sli shaley, very tight poro, no show. 1' sd, gry, fn to med grained, very silty, very tight, light stain, fair spotted fluor, light cut and fair odor. 5' sd, gry, fn to med grained, silty, sli calc, tight to sli friable, fair stain, gd fluor, fair cut and excellent odor.
NOTE: No apparent dip, all fluor was yellow to golden.

DST #1 6034-6116 open 1 hr. Rec. 85' drlg mud, no show oil, gas or water.
FPO - 75 30 SIP 865

Diamond Core #5 6116-6166. cut 50' recovered 44' being 2' sd, gry, fn to med grained, very silty, calc, sli lamin., very tight poro, tr stain, light to fair fluor, tr cut w/light odor. 4' sd as above, very tight poro, fair stain, good fluor, cut and odor. 2' sd as above, very tight poro, no stain, tr fluor, no cut, tr odor. 1' sd as above very tight poro, fair stain, good fluor, cut and odor. 2' sd as above except no show. 2' sd as above, except light to fair stain, fair to good fluor, fair cut and odor. 2' sd as above, lamin, very tight poro, tr cut and odor. 1' sd, gry, fn to med grained, silty, shaley, calc, lamin. very tight poro, light stain fair fluor in lamin tr cut and odor. 4' sd, gry, fn grained, silty, lamin, w/sh paper thin, very tight poro, no stain or cut, tr fluor & odor. 4' shale, blk, sli micaceous, sli sdy, no poro, no show. 2' sh, brn to blk, sdy, no poro, tr fluor & cut. 4' shale, blk, sli micaceous, sdy w/vert tight frac, no poro, fair fluor & tr cut in fractures. 6' sd, gry, tan, fn to med grained, silty calc, very tight poro, fair stain cut & fluor, good odor. 2' sd & sh, 1" lamin sand, very silty blk sh, very tight poro, tr fluor, no other show. 2' shale, blk sli sdy, no poro, no show. 1' sd, gry-tan, fn grained, hard, very lmy and silty, very tight poro, tr stain, fluor cut and odor. 3' lime, blk to drk gry, fn xln, very shaley, no poro, no show. 6' lost core.
DIP: Irregular, but appears to be flat at 6132-36.

Diamond Core #6 6168-6218. cut 50' recovered 47' being 2' sh, drk brn to blk, dns, limey, no poro, no show. 6' sd, v f g, gry to brn, sli calc, well cemented, argill to shaley, very tight poro, no show. 14' sd & sh, laminated sd & v sdy sh, sd is gry, v f g, sli calc, sh is drk brn to gry, sdy and micaceous, very tight poro, no stain, tr fluor in sd lamin, tr odor. 1' sd, v f g, gry to tan, silty, sli calc to argill very tight poro, no show. 1' sd as above, to very silty, dns, lamin. very tight poro, tr fluor & odor in lamin. 1' sh, blk, dns, sli sdy, no poro, no show. 1' sd, gry, v f g, dns, sli calc, very silty to sli argill, very tight poro, no show. 1' sh, drk brn to blk, sli calc, dns, sdy, no poro, no show. 1' sd, gray, v f g, limey, well cemented, sct oolites, very dns, tr sct vuggs, no show. 4' sd, gry, v f g, sli calc, dns, well cmt, very silty, very tight poro, tr sct stain, fair sct pale yellow fluor,

fair odor. 15' sd as above, very tight poro, no show. 3' lost core.
NOTE: Fracturing of a tight vert nature at 6196, 6189-91 and 6183.
DIP: Variable poor 3 to 5° dip at 6195 in sd-sh contacts.

DST #2 6107-6218 open 1 hr. Rec. 509' sli gas cut mud tstd 14,350 PP M cl.
FP 90-135 30 SIP 1855

Diamond Core #7 7037-7072 cut 35' recovered 17' being (18' lost core) 2' sd & sh, sd is v f g, gry, sli calc, silty, thinly lamin w/very drk-gry to blk sh, very tight poro, tr sct fluor and odor @ sd-sh contacts. 5' sh, blk, dns, v sdy, v sli calc w/sct thin (2") strks sd, drk gry-brn, fn to v dns & well cmt calc w/a tr of hairline vert fracturing, very tight poro fair fluor & odor in frac. 10' sd, lt gry, v f slty, v calc, shly, well cmt w/numerous thin sh lamin, very tight poro, tr sct fluor @ sd & sh contact.
NOTE: Orientation of this core is very questionable and depths assigned are arbitrary.
DIP: Fair 0-3° in sd & sh lamin.

DST #3 7008-7072 open 45 min. rec 10' mud NS.
FP 25 15 SIP 45

Diamond Core #8 7072-7122. cut 50' rec 50' being, 6' shale, gry-blk, calc, v sdy, silt thin vertical fracture, some sctd. thin shaley sd strks Lt G-F well cem, v silty, calc w/sc zones. v tight poro, no stain, light fluor in sd strks, fair odor. 22' sd: Lt G-F well cem, v silty calc w/sctd zones highly lamin w/sh, v tight poro, no stain, no fluor, no odor. 2' sd: Lt gry, v f g, calc, silty (Bleeding lightly) slightly friable, good stain & odor. 2' sd: gry-F grain-silty-calc-w/numerous thin sh laminations, v tight poro, no stain, no fluor, no odor. 1' sd: gray-fine sli calc, sli friable to silty, sli poro, good stain & odor. 17' sd: gry, F grain, sli calc, silty to shly, very thinly lamin w/sh, v tight poro, no show, trace sctd fluor at laminated contacts.
DIP: Good 2° dip in sand & shale laminations thru-out core.

Diamond Core #9 7122-7153. cut 31', rec 15' being 1' sd: gry F grain, v silty, calc-shly well cem & consolidated w/thin sh lam, v tight poro, no show, no odor. 1' sd: light gry, F grain, sli calc, silty, well cem, v tight poro, no show, no odor, no fluor. 1' sd: same as above 7122-7123. 1½' sd: light gry, F grain, silty, shaley, sli calc, tight poro, trace stain, good fluor, good odor. 7' sd: light gry, F grain, silty, calc, well cem, very tight poro, no show, no odor. 1½' sd: light gry, F grain, silty, sli calc, sli friable, trace sctd stain, sctd fluor, good odor. 16' lost core, 7135-7151. 2' sd: light gry, F grain, silty, sli calc, sli friable, sctd stain, sctd fluor, good odor.
NOTE: Show in bottom 3½' recovered was in sctd. 2" & 4" zones.
DIP: Good 3° dip at 7124.

Diamond Core #10 7154-7204. cut 50' rec 48' being 5' sd: light gray, F grain, silty, sli calc, sli friable, trace of stain, good fluor, good odor, 4' shale: blk, v sdy to silty w/numerous thin sd laminations, no poro, no show. 13' sd: light gry, F grain, silty to calc, w/sli sh laminations, very tight poro, no show. 1' sd: as above w/no sh laminations, sli friable, trace of stain, good fluor, good odor. 3' sd: as above w/sh laminations, v tight poro, no show. 1' sd: as above w/no sh laminations, sli friable light stain, good fluor, good odor. 16' sd: as above w/sh laminations, v tight poro, no show, no odor. 1' sd: as above w/no sh laminations, sli friable, trace sctd staining, good fluor, good odor. 4' sd: as above w/sh laminations, v tight poro, no show.
DIP: Good 2° to 3° dip in laminated zones.

DST #4 7087-7204 open 2 hrs. fair blow of air & died 1 hr. 45 min., rec 220' H g & sli oil cut drlg mud, ✓ estimated 588' free gas in drill pipe.
FP 28-55# 30 M SIP 940#

Diamond Core #11 7204-7254. cut 50', rec 48' being 2' sd: light gry, v F grain, well cem, shaley, sli calc, thinly laminated, v tight poro, no show. 29' sd: light gry, v F grain, sli calc to silty w/4" to 6" shale stks as follows 7219½ to 20, 21½ to 22, 7224 to 24½, 7228-28½, sli friable, trace to light stain, good fluor, good odor. 1½' sand & shale, thinly lam sh & sd as above, v tight poro, no show. 5½' sd: light gry, v F grain, sli calc, silty, sli friable, trace to light stain, good fluor & odor. 3' sd: lt gry, v F grain, silty, sli calc, shaley, v tight poro, no show. 2' sd: lt gry, F grain, silty sli calc, w/sctd barren laminated zones, v tight to sli friable, light sctd staining, sctd fluor & odor. 5' sd: lt gry, v F grain, calc, shaley, tight poro, trace sctd stain, fluor & odor.
NOTE: Very thin excellent show at 7249 & 7252.
DIP: Fair 3° dip entire core.

DST #5 7201-7254 open 1 hr. rec 115' gas & sli oil cut drlg mud ✓ 15' HO&gc mud.
FP 0-30# 30 M SIP 240#

Diamond Core #12 7256-7283. cut 27' rec 27' being 2' sd: lt gry, F grain, silty, sli calc, v tight poro, no show, no fluor, no odor. 1' shale: blk, silty, w/thin laminated sd stks, v tight poro, no show. 2' sd: as above, v tight poro, no show. 2' sd: as above, w/thin lam shale stks, no show. 13' sd: as above, to v shaley, no show. 7' shale: drk brn to blk very limey, dns w/bottom 5' well fractured vert., no show.
DIP: Poor 7-11° dip, irregular @ 7277'.

Diamond Core #13 7283-7334. cut 51' rec 51' being 3' shale: drk brn to blk, calc, vert frac, no poro, no show. 6' sd: gry to brn, v F grain, well cem, sli calc, silty & v shaley, v tight poro, no show. 2' sd: as above, no show. 1' sd: as above, v tight poro, fair to good fluor, sli odor. 4' sd: as above, v tight, NS. 3' sd: as above v tight poro, no stain, light to fair fluor, good odor. 1' sd: as above to brn F xyln, sdy lime, NS. 5' sd: lt gry, v F grn, sli calc, well cem, silty & shly, v tight poro, good to fair fluor, good odor. 2' sd: as above, v tight poro, no show. 7' sd: as above, v tight poro, no stain, good fluor, good odor. 3' shale: blk to brn & den, v tight poro, NS. 1' sd: lt gry to brn, v den qtzitic, v tight poro, (bleeding from tight frac) good fluor, good odor. 1' shale: drk gry to blk, v sdy, no poro, no show. 2' sd: gry to brn, v F grn, well cem, calc, very shly, v tight poro, no stain, trace sctd fluor, sli odor. 10' shale: drk gry to blk, dens, vert frac in bottom 8', no poro, no show.
DIP: Fair 2° dip.

Diamond Core #14 7334-7385. cut 51' rec 51' being 1' sd: gry to tan, F X, v limey, v tight poro, no stain, trace sctd fluor, sli odor. 1' shale & sd: v F laminated, v tight poro, no show. 1' sd: gry, F, very silty, calc, fair sctd fluor, sli odor. 2' shale & sd: F laminated, v tight poro, trace sctd fluor, sli odor. 2½' sd: gry, F, v silty, calc, w/sctd shly stks. Bottom 6" (41-41½') had show. 3½' sd: drk gry, F very shaley, silty w/sctd extremely shaley streaks, v tight poro, sli stain, fair fluor, fair odor. 5' sd: gry, F very silty, calc, w/half being laminated, tight poro, sli stain, fair to good fluor, good odor. 2½' sd: as above w/2 to 3" shale stks, v tight poro, no stain, fair spotted fluor, fair odor. 2' sd: gry to gry tan, F, very limey, v tight poro, no show. 4' sd: drk gry, F, v shaley, (w/sctd thin shale lam) v tight poro, no stain, trace very sctd fluor, sli odor. 1½' shale: drk gry to blk, v sdy w/sctd thin sh strks, v tight poro, no stain, w/trace very sctd fluor, no show. 3' sand: gry F w/sctd lam of shale, v tight poro, no stain, w/trace of very sctd fluor, no show. 4' shale: blk, very dense w/a few sctd tight vert frac, no poro, no stain, trace of fluor in frac, no show. 4' shale: blk, very dens, w/a few sctd tight vert frac, no poro, no stain, trace of fluor in frac, no odor. 1' sd: gry to tan, (dns & limey) tight vert frac, v tight poro, good bleeding into vert frac, fair fluor, sli odor. 4' shale: blk, sctd thin sd strks, top 2' frac & broken, no poro, no stain, trace of fluor in frac, sli odor. 7' sand & shale: finely laminated, v tight poro, no stain, no fluor, no odor.
DIP: 3° in laminated zone.

Diamond Core #15 7387-7430. cut 43' rec 2' being 2' sand & shale: v shaley sand, laminated, rec in chunks, no poro, no show, 41' lost core.
NOTE: No depth can be assigned to rec core.
DIP: No apparent dip in recovered core.

Diamond Core #16 7432-7447. cut 15' rec 13' being 6' shale: drk brn to gry, thinly lam & v sdy to silty, tight poro, no show. 4' shale: drk gry to blk, w/sctd sdy strks, no poro, no show. 1' sd: gry to tan, F grain, sli calc, w/sctd sh strks, v sdy, v silty, sli bleeding, tight poro, good stain, good fluor, good odor. 6" lime: drk brn, dens, F xln, massive, v fssl, brachy, fusul, crenoid, v tight poro, no show. 5' sand & shale: thinly lam, drk gry, v silty, argill sand, v tight poro, no show. 2' shale: drk gry to blk w/sctd thin sd strks, no show. 2' lost core.
NOTE: Entire core vert fractured.
DIP: Good 2-3° in laminations @ 7440'.

Diamond Core #17 7450-7501. cut 51' rec 51' being 3' shale & sand: highly laminated, v T poro, NS. 7' sand: lt gry, F grain, sli calc, silty, well cem, v T poro, fair to good stain, good fluor, good odor. 1½' sd: as above to shaley, v T poro, NS. 3' sd: as above, v T poro, fair to good stain, good fluor & odor. ½' sand: as above, to very shaley, v T poro, NS. 2' sand: lt gry, F, sli calc, silty, v T poro, fair to good stain, good fluor & odor. 3' sand: as above to very shaley, v T poro, NS. 1' sd: as above, v T poro, fair to good stain, good fluor & odor. 1' sd: as above, v T poro, no show. 2½' sd: as above, v T poro, fair to good stain, good fluor & odor. 4½' sd: as above, w/shale lam zone @ 7475' & sand is very shaley, v T poro, NS. 1' sd: lt gry, F, sli calc, silty, v T poro, NS. 10' sd: lt gry to brn, F, silty, sli calc, v shaley w/sh lam @ 7487-7489' & w/v foss sdy zone @ 7486', v T poro, NS. 1½' sd: lt gry, F, sli calc, silty, v T poro, fair stain, good fluor & odor. 4½' sd: as above to shaley, lam @ 96' v T poro, no show. 5' sd: as above to shaley, v T poro, fair stain, good fluor & odor.
DIP: Fair 3° dip @ 7453-7475'.

Diamond Core #18 7501-7531. cut 30' rec 30' being ½' sd: drk gry, v F, v silty, shaley, highly lam w/shale, v T poro, NS. 2' sd: lt gry, F grain, silty, sli calc, v T poro, no show. ½' lime: brn, dens, F xyln, very Fssl, v T poro, no show. 2½' sand: lt gry, F, silty, sli calc, v T poro, good stain, fluor & odor. ½' sd: brn, F grain, v limey, dens, v T poro, no show. 2' sand: lt gry, v F, sli calc, silty, shaley, v T poro, sli stain, good fluor & odor. 2½' sand: gry, v F, silty, v shaley, & highly lam w/sh stringers, v T poro, fair fluor, good odor. 1½' shale: drk gry to blk, sli calc, NS. 1' lime: brn, dens, sub xln, v sdy, NS. 3' sd: gry to brn, fine to med fine, v calc to limey, v T poro, trace of stain, fair fluor, good odor. 11' sand: tan to gry, v F grain, silty, v shaley w/numerous sh laminations, v T poro, NS. 1½' sand: brn, dens, v F, silty, v shaley, v T poro, heavy bleeding, good fluor & odor. 2½' sand: tan to gry, v F, silty, v shaley, w/numerous sh laminations, open vert frac from 7521 to 7531', v T poro, NS.
DIP: Fair to good 3° dip in laminations from 7517 to 7531'.

DST #6 7440-7531' open 2 hrs., immediate light bubble of air increased to a good strong blow @ end of 6 min. Opened 5/8" surface choke partially - blow decreased to a light blow at end of 1 hr. & 40 min. - closed surface choke - built up to strong blow of air in 8 min. & continued to end of test. Lost approx. 20 bbls. drilling mud during test, appeared to be losing mud to formation above packer point as it was a very slow loss. Recovered 2930' uncut drlg. mud. Chloride content checks w/reg. drlg. mud chloride content. Upon examination of test pressure charts it was found that the 15 min. SIBHP was that of the hydrostatic head of the mud column. Therefore, it must be assumed that the drlg. fluid was by-passing the packer thru minute fractures to zone being tested.
FP 215-1500# 15 M SIP 3730#

Diamond Core #19 7533-7552. cut 19' rec 18' being 1' lime: blk F X den, v fossil, good bleeding of drk brn oil, v sli sctd poro, trace sli stain, sli sctd fluor, fair odor. 1' lime: drk brn to blk, F X, v den, no poro, stain, fluor or odor. 14' shale: blk w/numerous blk to brn F X li strks, & 5 (1") brn chert strks, no poro, stain, fluor or odor. 2' lime: drk brn to blk, F X, very den w/4" shale strks, 6" fair poro, sli sctd stain, 6" good fluor w/fair bleeding, good odor. 1' lost core.
NOTE: No evidence of conglomerate or Breccia, thin tight unfilled vertical frac thru-out core, all of core was broken along fractures when pulled, show was not found in fractures except in the two show zones.
DIP: Poor, flat variable.

Diamond Core #20 7552-7561. cut 9' rec 9' being 9' lime: dense, v F X, brn, siliceous & has conchoidal fracture w/sctd dense shale laminations, no poro or stain, trace of fluor, sli odor.
NOTE: Trace of show in 6" of extremely siliceous lime @ 7552', fracturing was negligible as core pulled without breaking, some tight paper thin calcite fractures were present.
DIP: Good 0° dip in lime & shale laminations.

Diamond Core #21 8728-8774. cut 46' rec 46' being 39' sand: white to lt gry, v F, sli calc, cem silty, w/sctd very small blk material (Phosphate?), v tight poro, v lt stain, good fluor & odor. 4' li: gry to brn, M-G xln, sdy, v fossil, dens, v tight poro, v lt stain, good fluor & odor. 3' sand: as above, v tight poro, NS.
NOTE: 6° dip @ 8736' & fair 2° dip @ 8763'.

ZONES OF SHOW AS FOLLOWS:

8729.0-32	3.0 Ft.	8750.0-50.7	.7
33.0-35	2.0	51.8-53.5	1.7
36.3-37.1	.8	54.5-54.9	.4
37.7-38.5	.8	55.4-56.2	.8
41.2-43.4	2.2	59.0-59.6	.6
44.3-46.2	1.9	63.2-63.6	.4
47.6-48.1	.5	66.3-66.7	.4

Total Show 16.0 Ft.

DST #7 8715-8774 open 2 hrs. light blow of air increased to good blow of air @ end of 22 min., then decreased slowly to a very light blow of air @ end of test. Recovered 330' free gas in DP & 240' v slly g & oc drlg. mud. (Oil visible under fluorescent light only.)
FP 45-135# 15 M SIP 315#

Diamond Core #22 9115-9145. cut 30' rec 30' being 30' lime: drk brn, v dens, massive sub xyln to argill, no poro, stain, fluor or odor.
DIP: No recognizable dip.

Diamond Core #23 9531-9559. cut 28' rec 28' being 13½' sand: lt gry to clear, v F, silty, well consolidated w/numerous frac, 13½' net show, avg. poro 11.5%, av. perm. 0.4 MD. trace stain, lt to solid blue white fluor, good to excellent odor. 4½' sand: gry, v F, v sdy to shaley, avg. poro 6%, avg. perm. 0.4 MD., NS. 10' shale: blk, dens, limey, w/sctd sand laminations, no poro, stain, fluor or odor.

NOTE: Excellent fluor in frac planes, porosity & permeability results from Geolog. core analysis.
DIP: No recognizable dip.

DST #8 9502-9560 open 2 hrs. 5 min. Initial weak blow of air, increased to a fair blow of air at end of 20 min. then gradually decreased to a weak blow of air at end of test. Rec. 987' uncut drlg. mud + 450' v slly O & gc drlg. mud. (Oil very light green & high gravity.) Chloride checks 1200 PPM - checks w/reg. drlg. mud.
FP 165-605# 15 M SIP 620#

Diamond Core #24 11,165-11,210. cut 45' rec 45' being 3' shale: blk, slly limey, no poro, stain or fluor, sli odor. 1½' lime: drk brn, shaley, F X, no poro, stain or fluor, sli odor. 3' shale: blk, slly limey, no poro, stain, or fluor, sli odor. ½' lime: brn, shaley, crinoidal, F X to M X, H_2S odor, NS. ½' shale: blk, limey, possible 10° dip, no poro, stain or fluor, sli odor. 1' lime: drk brn, shaley, F X, NS. 18½' shale: blk, slly limey, sctd shaley lime partings w/sctd crinoid frags & calcite filled vert fracs in bottom 4', no poro, stain or fluor, sli odor. 2' conglomerate: blk limey shale matrix, crinoid & foss frags, lt gry to brn limey chert Incl, no poro, stain, fluor or odor. 3' conglomerate: drk silic, argill lime matrix incl. as above, no poro, stain or fluor, fair odor. 4' conglomerate: as above, but containing vert fractures bleeding oil & gas, poorly frac poro, few sctd small vugs, good staining & fluor along fractures, good odor. 1' shale: blk, no poro, stain or fluor, very sli odor. 7' conglomerate: drk argill, silic lime matrix, no poro, stain or fluor, sli odor.
NOTE: Core was bleeding gas when freshly pulled.
DIP: 11,173' - poss. 10° dip
11,175' - poss. 0-10° dip
11,202' - poss. 20-40° dip

Diamond Core #25 12,599-12,604½'. cut 5½' rec 5½' being 4' lime: gry to tan, F X to M X, salty taste, good vugular poro, no stain, fluor or odor. 1½' lime: gry to brn, sub lith to v F X, some oolites & sctd foss frags, no poro, stain, fluor or odor. (No apparent dip.)

DST #9 11,136-11,315, used 2587' water blanket, open 1 hr. 33 min. Initial lt bubble of air decreased to very light bubble of air at end of test, rec 558' uncut water blanket + 2029' gc wb, + 40' mud & gas cut wb + 120' gcm. Top mud = 80/6 gas, & 2500 PPM chloride. Bottom mud = 40/6 gas, & 3000 PPM chloride.
FP 1245-1245# 15 M SIP 1645#

DST #10 12586½-12,599, used 5817' water blanket, open 3 hrs. 40 min., initial fair blow of air, increased to a very strong blow of air at end of 1 min. opened 5/8" SC after 2 min., decreased to a light blow of air in 6 min. (Tool open 8 min.) closed surface choke after TO 16 min., increased to a very strong blow of air in 30 seconds, opened 5/8" SC after TO 18 min., decreased to a light pulsating blow of air in 2 min., (TO 20 min.) & continued. WB to surface in 73 min., gas to surface in 2 hrs. & 1 min., mud to surface 2 hrs. & 7 min., salt water to surface 2 hrs. & 40 min., cleaned to pits 40 min., turned to test tank, initial gas flow 414 MCFPD, leveled off after 25 min. at 259 MCFPD & flowed 24.84 bbls. salt water w/very sli trace of distillate per hr. 63,000 PPM chloride, reversed out gas & salt water w/very sli trace of distillate.
FP 3600-4855# 55 M SIP 7620#

Diamond Core #26 12,604½-12,612½. cut 8' rec ½' being ½' lime: drk brn to brn, sub X, v dens, w/conch frac & occasional foss frag, no poro, no stain, fluor or odor. 7½' lost core.
DIP: No apparent dip, core head was worn off.

Diamond Core #27 12,908-12,949. cut 41' rec 41' being 11' lime: white to gry brn, foss, crinoids, fus, bryz brachs, sli vugular poro, no stain, fluor or odor. 30' shale: gry, blk, Mica, sctd foss limey, shale strks, no poro, trace sctd stain & fluor, no odor
NOTE: Dip, fair 20° dip in shale bedding.

Diamond Core #28 15,546-15,586. cut 40' rec 40' being 7' dolomite: lt gry, dens, F X, w/multiple fracturing w/anhydrite fill @ 15,550' frac poro, no stain, no fluor, sulphur odor. 33' dolomite: as above w/sctd. anhy filled zones, very small sctd. vugs & fractured poro, no stain, no fluor, sulphur odor.
DIP: No dip apparent.

Diamond Core #29 15,587-15,633. cut 46' rec 46' being 46' dolomite: lt gry, F X to M X, dense irregular, tight fractures & sctd. small vugs, trace of sctd vugs & poorly fractured poro, no stain or fluor, sulphur odor.
DIP: No dip apparent.

DST #11 15,547-15,633, used 8200' water blanket, open 1 hr. 30 min., intermittent light bubble of air for 6 min., then continued steady w/a light bubble, dead after 1 hr. 20 min., rec 8200' uncut wb + 140' drlg. mud (chloride 7000 PPM) same as reg. drlg. mud.
FP 3755-3820# 15 M SIP 6665#

Diamond Core #30 15,643-15684. cut 41' rec 41' being 41' dolomite: fine to medium crystalline, dense, lt gry, very highly to highly frac, fractures tight w/anhy filling, fractures from 15,655-666 & 15,679 to 682. Bottom 4 ft. of core very broken, strong sulphur odor thruout, traces of small vugular porosity 15,644-45, 15,680-81, & 15,683-84.
DIP: No recognizable dip.

DST #12 15,633-15,854, used 8200' water blanket, open 4 hrs. weak blow of air & increased to fair blow of air after 15 min., then decreased slowly to a light blow of air after 2 hrs. & continued steady. Opened 1" surface choke after 3 hrs. & 50 min., died immediately, closed SC - blow increased to a light bubble after 5 min. & continued to end of test. Rec. 8200' uncut wb / 658' drlg. mud / 282' mc salty sulphur water, / 1080' sli mc salty sulphur water 45,000 PPM chloride.
FP 3685-4225# 15 M SIP 6530#
Mud column press. 9815 PSI
Mud Weight 12# Per Gallon

The total depth of 15,854' was reached in 254 days. Ran Schlumberger, velocity survey, ES, Micro-log, gamma ray, neutron log and dip meter.

Casing record as follows: 20" @ 425' w/700 sax cement
13 3/8" @ 3630' w/3350 sax cement
9 5/8" @ 9006' w/2590 sax cement

Spotted 100 sax cement @ 15,850', 75 sax @ 12,625', 100 sax @ 9050'. Perforated at 7530' w/3 shots, set retainer at 7518' and squeezed w/100 sax cement. Perforated at 7470' w/3 shots, set retainer at 7456' and squeezed w/100 sax cement.

4-2-54 Perforated w/16 jet shots 7500' to 7504. Ran 2" tbg. to 7497' w/pkr. @ 7472' and swbd. dry, Sandoil frac w/2000 gal. 18° API oil w/1 3/4# sand per gal., through csg. perfs. 7500' to 7504', shut in 1 hr. after treatment, (154 bbls. load oil to be recovered) flowed 63 bbls. load oil to tank & estimated 8 bbls. to pits in 48 min. and died. Swbd. final test rate with fluid top @ 7000', swabbing one run per hour, and rec 1.38 bbls fluid per hr., 56% salt water & 44% load oil w/trace of gas. Plugged back to 7468' w/30 sax cement.

4-6-54 Perf. w/16 jet shots 7456'-7460', ran 2" tbg. to 7456' w/pkr. @ 7437' and swbd dry, Sandoil frac w/2000 gal. 24° gr oil w/4000# sand, csg. perfs. plugged when 25 bbls. of sand oil were in formation, unseated pkr. & reversed out, pkr. failed to re-set, pulled out of hole, reran pkr. displaced load oil w/water, set pkr., & swabbing @ 6900', rec spot water plug / 10 bbls. load oil.

4-7-54 Swbd. 4.14 bbls. fluid, being 2.20 bbls. oil, 1.94 bbls. water (47% water) 8 hrs., final run of swb. was 70% water w/light blow of gas, lack 18 bbls. of recovering load oil.

4-8-54 Spotted 30 sax cement @ 7463', perf. w/3 shots @ 7252' and set retainer @ 7234' & squeezed w/100 sax cement. Perf. @ 7188' w/3 shots, set retainer @ 7146' and squeezed w/100 sax cement.

4-9-54 Drilled out to retainer @ 7234', perforated w/32 jet shots 7218'-7226'.

4-10-54 Ran tbg. w/pkr. @ 7201' & swbd. dry. Sandoil frac w/3000 gal., w/1# sand per gal., (Total load oil to recover 160 bbls.) opened well after 1 hr. 55 min., flowed 49½ bbls. load oil 1st hr., 11 bbls. load oil 2nd hr., TP 25#, 7 bbls. load oil 3rd hr., TP 15#, total of 67½ bbls. LO.

4-11-54 Fluid level 6800'-7000'. Swbd. 6.55 bbls. oil, gravity 32.4 / 65 to 70% water in 5 hrs. 20 min.

4-12-54 Swbd. 48.18 bbls. fluid, being 37.14 bbls. water, 11.04 bbls. oil (77% salty water).

4-13-54 Final swb. test, swbd. 0.34 bbls. oil / 6.54 bbls. water 3 hrs. Pulled tbg. and spotted 30 sax cement @ 7234'. Perforated @ 6130' w/3 shots, set retainer @ 6124' and squeezed w/100 sax cement. Perforated @ 6082' w/3 shots & set retainer @ 6042' and squeezed w/100 sax cement.

4-14-54 Drilled retainer @ 6042', went out of cement @ 6088'. Perforated w/24 shots 6112'-6118'.

4-15-54 Ran tbg. @ 6108', swabbed spot water, fluid broke in on first run to bottom, 12 hr. swabbing test rec. 84.12 bbls. fluid, 9.64 bbls. oil, 74.48 bbls. salt water, gr. of oil 35.4°, salt content 84,000 PPM.

4-16-54 Stopped swabbing and fluid level rose to 2500' from surface, ran retrievable retainer to 6122' and spotted 35 bbls. oil, pulled up & set retainer @ 6088' broke formation @ 3000# w/oil and squeezed perfs. 6112'-6118' w/75 sax diesel oil cement.

4-18-54 Ran 2" tbg. to 6114' w/pkr. @ 6093', and swbd. dry, acidized w/250 gal. MCA perfs. 6112'-6118', swbd. dry & rec. 100% water. Fluid level @ 6000'.

4-19-54 Sandoil frac w/3000 gals. 1# sand per gal. Opened for 15 hr. test, flowed 169.83 bbls. fluid being 17.94 bbls. water, 151.89 bbls. load oil, flowed 5 bbls. fluid per hr. 20% BS & 20% water, gas vol. tstm.

4-20-54 Well died, started swabbing, swbd. 109.32 bbls. fluid in 24 hrs. being 52.62 bbls. water & 55.70 bbls. oil, swabbing 1 time per hr. from bottom, (fluid level @ 5800') recovering 0.69 bbls. fluid per hr. 25% salt water. Total oil rec. to date 207.52 bbls., total new oil 48.52 bbls.

4-21-54 Acidized w/1000 gals., perfs. 6112'-6118' flowed back 12¼ bbls. flush oil and died. Swbd. acid water, then took 12 hr. swab test. Swabbing continuously, recovered 152 bbls. fluid, 74 bbls. oil, 78 bbls. water, fluid level 1500' to 2000' from surface. Unable to lower. Fluid was 25% water last 4 hrs. Good blow of gas.

4-22-54 Shut in 4 hrs. 45 min., TP went to 225#, opened up ½" choke for 15 min., TP dropped to 25#, opened wide open additional 15 min. & died, 16 hr. swabbing test, running swab once every 45 min., fluid level 1500', rng. swab to 3000', rec: 120 bbls. fluid, being 72.88 bbls. water, 47.12 bbls. oil, 60.73% water, good blow gas after each swab run for 10 min.

4-23-54 24 hr. swab test, swbd. 170 bbls. fluid, 83.30 bbls. oil, 86.70 bbls. water, 12 hrs., swbd. 107 bbls. fluid, 52.43 bbls. oil, 54.57 bbls. water, (51% water). Fluid level @ 2000' from surface. Running swab to 3500' each 30 min., gravity 29.2 at 60°, chloride 176,000 PPM.

4-24-54 15 hr. swabbing test, ran swab 2 times per hr. Fluid level @ 1800', pulling swab from 3000'. Rec. 90 bbls. fluid, being 50 bbls. oil, 40 bbls. water. Ran BHP gauge, shut well in 7 hrs. BHP was 1919# at 6109'. After well shut in 19 hrs. BHP was 2060#. No tbg. pressure, tbg. was plugged. Perforated tubing one joint above pkr., circulated mud out of annulus w/water.

4-26-54 Pulled 2 3/8" OD tbg. & ran 175 jts. 2 7/8" OD 6.40# J-55 tbg. 5480' set at 5501', w/perf. nipple 5468' to 5471', started rigging down rotary tools.

Completion: TD 15,854' dolo., PB 6130', Top Pay 6112', I.P.P. 67 BO / 204 B X W, 24 hrs., 2½" tbg. @ 5480', GOR 639 to 1, gravity 42.8, csg. press. 25#, tbg. press. 0#, completed 5-11-54 after 250 gals. M/A, 1000 gals. R/A and 3000 gals Sandfrac through perfs. 6112'-6118'.