

dugan production corp.

JEROME P. McHUGH
Native Son #2
1020 FSL - 1670' FWL
Sec. 27, T25N R2W NMPM
Rio Arriba County, NM

Application for Downhole Commingling
Jerome P. McHugh - Native Son #2 Well
T-25-N, R-2-W, NMPM
Sec. 27: Unit N, 1020' FSL & 1670' FWL
Rio Arriba County, New Mexico
Case No. 8041, Exhibit No. 5

MORNING REPORT

- 10-9-83 230' W.O.C.
Spudded 12-1/4" hole at 6:30 p.m. 10-8-83. Drilled to 230'.
Rigged up and ran 5 jts. 9-5/8" O.D., 47#, 8 Rd, LT&C casing.
T.E. 212.18' set at 224' RKB. Cemented with 135 sx class B
plus 2% CaCl. P.O.B. at 5:15 a.m. 10-9-83. Circulated good
cement to surface. W.O.C.
- 10-10-83 1654' Drilling Wt. 8.9 Vis 29 W.L. 10.0 1° at 512';
1 1/2° at 790'; 1-3/4° at 1035'; 2° at 1256'; 2 1/4° at 1550'
- 1 hr. - trip
12-1/4 hrs - drilling
1-3/4 hrs - survey
8-1/4 hrs - W.O.C.
3/4 hr. - drilling cement
- Pressure tested surface casing and B.O.P. to 1000 psi for 30 min.
Held OK.
- 10-11-83 3003' Drilling Wt. 8.8 Vis 27 W.L. 7.0 2-1/2° @ 1810'
2-3/4° @ 2026'; 3° @ 2235'; 3° @ 2450'; 3° @ 2708'; 2° @ 2963'
- 1-1/2 hrs - trip
19-1/2 hrs - drilling
1/2 hr - rig service
2-1/2 hrs - surveys
- 10-12-83 3698' - Drilling Wt. 9.0 Vis 38 W.L. 9.0 2° at 3078'
2° at 3213'; 1-3/4° at 3430'; 2° at 3651'
- 2-3/4 hrs - trip
18-1/4 hrs - drilling
1/2 hr - rig service
2 hrs - surveys
1/2 hr - wash 60' to bottom

10-13-83 3976' - Drilling Wt. 9.0 Vis 45 W.L. 8 10% LCM
2° at 3893'
4-1/2 hrs - trip
8-1/4 hrs - drilling
1/2 hr - rig service
1/4 hr - survey
7-1/2 hrs - pull 15 stands; mix mud and trip back in hole
3 hrs - working pipe and regaining circ. Lost circ. during trip.

10-14-83 4364' - Drilling Wt. 9.0 Vis 42 W.L. 8.0 Trace LCM
3/4° at 4156'
3-3/4 hrs - trip
19-1/4 hrs - drilling
3/4 hr - rig service
1/4 hr - survey

10-15-83 4890' - Drilling Wt. 9.0 Vis 37 W.L. 12 1° at 4444'
3-1/2 hrs - trip
19-3/4 hrs - drilling
1/2 hr - rig service
1/4 hr - survey

10-16-83 5182' - Waiting on Magnet Wt. 8.7 Vis 42 W.L. 10.5
20% LCM 1° at 4948'
2-1/2 hrs - trip
12-1/2 hrs - drilling
1/4 hr - rig service
3/4 hr - survey
1-3/4 hrs - W.O. magnet
6-1/4 hrs - lost circ. at 5182 (lost 500 bbls.)

10-17-83 5182' - Fishing Wt. 8.7 Vis 42 W.L. 10.5 20% LCM
16-1/4 hrs - trip
1 hr - W.O. magnet
1 hr - wash to bottom
1-1/4 hrs - rig repair
3-3/4 hrs - mixing mud
1/2 hr - trying to unplug magnet - lost 650 bbls. mud
1/4 hr - rig service

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10-18-83 5225' - drilling Wt. 8.8 Vis 42 W.L. 14 14% L.C.M.
17-1/4 hrs - trips
2-1/4 hrs - drilling
1/2 hrs - circ. and cond. mud
4 hrs - rig repair

10-19-83 5669' - Drilling Wt. 8.7 Vis 45 W.L. 10 8% LCM
1 1/2° at 5528'
5-3/4 hrs - trip
16-1/2 hrs - drilling
1/4 hr - rig service
3/4 hr - rig repairs
3/4 hr - cut drilling line

10-20-83 6191' - Drilling Wt. 8.8 Vis 48 W.L. 100 4% LCM
1 1/4° at 6065'
22-3/4 hrs - drilling
3/4 hr - rig service
1/2 hr - survey

10-21-83 6643' - Trip Wt. 9.0 Vis 45 W.L. 11 5% LCM
2 hrs - trip
19 hrs - drilling
3/4 hr - rig service
1/4 hr - survey
2 hrs - mix mud and LCM (lost 200 bbl. mud 6073-6222 & 125 bbl. mud 6556-6611)

10-22-83 6868' - mixing mud & LCM Wt. 8.9 Vis 48 W.L. 10.0
6% LCM
6-1/2 hrs - trip
15-3/4 hrs - drilling
3/4 hr - rig service
1 hr - mix mud and LCM (Lost 400 bbls. mud at 6868')

10-23-83 7019' - Drilling Wt. 8.7 Vis 48 W.L. 7.0 30% LCM
3-3/4 hrs - trip
6-1/2 hrs - drilling
1/4 hr - rig service
13-1/2 hrs - mix mud & LCM - filling hole and regaining circ.
Lost 450 bbl. mud at 6981'. Pulled 10 stands and
pumped mud in hole with no returns. Pulled 10 more
stands and hole unloaded. Flowed gas and mud in

(Cont.)

10-23-83 heads. No oil. Pumped mud in hole and killed gas
(cont.) flow. Pulled pipe to 3399' and mixed and pumped mud.
Regained circulation. Pumped approx. 700 bbl. mud
attempting to regain circulation. Lost additional
200 bbls. after regaining circ.

10-24-83 7314' - Drilling Wt. 8.7 Vis 42 W.L. 10.0 10% LCM
2½° at 7175'

23-1/4 hrs - drilling
1/4 hr - rig service
1/2 hr - survey

10-25-83 7335' - Mixing mud Wt. 8.7 Vis 44 Wt. 10 10-12% LCM

11-3/4 hrs - trip
3-1/4 hrs - drilling
1/2 hr - rig service
4 hrs - rig repair
4-1/2 hrs - mix salt gel squeeze.

10-26-83 7335' - Mixing mud Wt. 8.8 Vis 50 W.L. 10 20% LCM

4-1/2 hrs - trips
1/2 hr - rig service
13 hrs - washing bridges
4-1/2 hrs - mixing mud
1-1/2 hrs - repairs

10-27-83 7335' - 24 hrs. lost circulation. Set one salt gel plug at 3900'
Now tripping in hole at 7000' washing to bottom. Have full returns
at report time.

10-28-83 7447' - Washing to bottom

3-1/4 hrs - trip
7-1/2 hrs - drilling
3 hrs - wash to bottom
8 hrs - mix mud
2-1/4 hrs - spot salt gel squeeze

10-29-83 7740' - Drilling Wt. 8.9 Vis 45 W.L. 12.0 20% L.C.M.
2° at 7685'

1/4 hr - trip
21-1/4 hrs - drilling
1/2 hr - rig service
3/4 hr - survey
1-1/4 hrs - wash 140' to bottom

10-30-83 7882' - Trip Wt. 8.9 Vis 43 W.L. 11.0 18% LCM

7-1/2 hrs - trip
14 hrs - drilling
1 hr - rig service
3/4 hr - cut drilling line
3/4 hr - repair

10-31-83 8035' - Drilling Wt. 8.9 Vis 45 W.L. 12.0 20% L.C.M.

7-3/4 hrs - trip
14 hrs - drilling
1 hr - rig service
1-1/4 hrs - wash to bottom

11-1-83 T.D. 8128' - Logging Wt. 9.0 Vis 60 W.L. 12 20% L.C.M.
1 1/2° at 8128'

5 hrs - trip
6-3/4 hrs - drilling
1/4 hr - rig service
2 hrs - circ.
2 hrs - change drilling line
8 hrs - logging

11-2-83 T.D. 8128' - Running 4 1/2" casing
Finished running IES, CDL & CNL logs by Welex. T.I.H. with drill pipe. Circ. bottoms up. Laid down drill pipe and rigged up to run 4 1/2" casing. Now running 4 1/2" casing.

11-3-83 Ran 208 jts. 4 1/2" OD, 11.6#, K-55, 8 Rd LT&C csg. T.E. 8154.28' - cemented - set @ 8133' RKB. Cemented first stage with 10 bbls. mud flush followed by 400 sks 50-50 pos with 2% gel and 6 1/4# gilsonite per sk and 1/4# flocele per sack, followed by 150 sks class "B" neat with 1/4# flocele per sk. (Total cement slurry first stage - 737 cu. ft.) Good circulation throughout job. Maximum cementing pressure 800 psi. Reciprocated csg. OK while cementing. Bumped plug with 1500 psi. Float held OK. Dropped opening bomb. Opened stage tool at 5852'. Circulated with rig pump 2 1/2 hrs. Rigged up HOWCO and cemented 2nd stage with 10 bbls. mud flush, followed by 210 sks 65-35 with 12% gel - 6 1/4# gilsonite per sk. and 1/4# flocele per sk.; followed by 310 sks 50-50 pos with 2% gel and 1/4# flocele per sk. (Total cement slurry 2nd stage - 885 cu. ft.) Good circulation throughout job. Maximum cementing pressure 800 psi. Closed stage tool with 2500 psi. Held OK. Dropped opening bomb and opened stage tool at 3570'. Circulated with rig pump 1 1/2 hrs. Rigged up HOWCO and cemented 3rd stage with 10 bbls. mud flush, followed by 450 sks 65-35 plus 12% gel and 1/4# flocele per sk, followed by 100 sks 50-50 pos with 2% gel and 1/4# flocele per sack. (Total cement slurry 3rd stage - 1121 cu. ft.) Maximum cementing pressure 800 psi. Closed stage tool with 2500 psi. Held OK. Circulated

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11-3-83 mud flush with tr. contaminated cement. Job complete 3:00 P.M.
(Cont.) 11-2-83. Nippled down BOP. Set 4½" csg slips. Cut off csg.
and released rig at 5:00 P.M. 11-2-83.

DAILY REPORT

11-4-83 Move in and rig up Pioneer Well Service. Nipple down well head.
Nipple up BOP. Set pump and pit. Shut well in. Tubing did
not show up.

11-5-83 Unload tubing truck. Run in hole with 3-7/8" bit and tubing.
Tag up at 3570'. Drilling 10' cement. Drilling D.V. tool.
Circulate clean. Drain pump. Shut down for night.

11-6-83 Sunday - shut down

11-7-83 GIH with tbg. Tag up @ 5700'. Drlg cement and DV tool @ ± 5852'.
Circulate clean. GIH with tbg. Tag up @ 7980'. Clean out LCM
to ± 8019'. Circulate clean. Rig up Western Co. Press test 4½"
casing to 4000 psi - OK. Spot 250 gallons 7½% double inhibited
HCL. P.O.H. Rig up Basin Perforators and attempt to record GR
correlation log. Panel out of truck. Shut down.

11-8-83 Change out perforating trucks. Ran GR-Correlation log from
PBD 8044' to 7700', 7500 to 7300', 7100 to 6700', 5820 to 5150',
3550 to 3300', 3050 to 2550'.

Perforate Lower Mancos 7326, 94; 7436, 66, 75, 78, 85 (7 holes).

Perforate Dakota 7886, 88; 7919, 30, 38, 55, 63, 65, 67, 68, 69,
75, 76, 77 (14 holes).

Breakdown perfs with water at 2100 psi. ISDP 1300 psi. Drop 31
RCN ball sealers. Did not ball off. Reached 3900 psi at 5 BPM.
Ran 4½" junk basket. Retrieved 29 balls (15 hits).

Fraced Lower Mancos (7326-7485) and Dakota (7886-7977) perfs as
follows:

15,000 gal. Mini-Max III-30 with 2% diesel - pad
15,000 gal. Mini-Max III-30 with 2% diesel + 1 ppg 20/40 sand
15,000 gal. Mini-Max III-30 with 2% diesel + 1½ ppg 20/40 sand
15,000 gal. Mini-Max III-30 with 2% diesel + 2 ppg 20/40 sand
4,746 gal. fresh water flush

Max. treating press. 3800 psi Min. treating press. 3200 psi
Ave. treating press. 3400 psi at 27 BPM
ISDP 2300 psi 15 min. shut in 2300 psi

Totals: 60,000 gal. Mini-Max III-30, 67,500# 20-40 sand, 1200 gal.
Aqua Flow, 55# B-5 breaker

Could not get 4½" retrievable bridge plug through upper D.V. tool.
Shut down.

11-9-83 Opened well up. Flowing back water. GIH with casing scraper and bit. Ream out DV tools at 3570 and 5852'. POH. Rig up Basin Perforators. Set retrievable bridge plug at 7250'. Dump 1 sack of sand on top of bridge plug. Pressure test to 4000 psi. Held OK.

Perforate Mancos as follows: 6802, 16, 36, 44, 49, 53, 69, 71, 73, 75, 81, 98; 6900, 02, 04, 13, 27, 29, 31, 39, 41, 53, 65, 77, 83, 88, 91; 7023, 29, 33, 36, 39, 49, 53, 61, 66, 70, 73, 80, 87.
(Total 40 holes, 6802-7087)

Start breakdown - est. rate 50 BPM at 3800 psi. Drop 60 RCN ball sealers. Ball off with 4000 psi. Ran 4½" junk basket. Retrieved 14 balls (9 hits).

Fraced Mancos as follows:

15,000 gal. gelled water pad with 25# Aqua Seal/1000 gal.
20,000 gal. gelled water with 15# Aqua Seal/1000 gal. + 1 ppg
20/40 sand
12,000 gal. gelled water with 10# Aqua Seal/1000 gal. + 1½ ppg
20/40 sand
12,000 gal. gelled water with 10# Aqua Seal/1000 gal. + 2 ppg
20/40 sand
11,000 gal. gelled water with 10# Aqua Seal/1000 gal. + 2½ ppg
20/40 sand
4,410 gal. gelled water flush

ISDP 400 psi Well went on vacuum in 3 min.
Max. treating press. 3650 psi. Min. treating press. 2900 psi.
Ave. treating press 3100 psi at 58 BPM.

Totals: 70,000 gal. gelled water (20# J-2/1000 gal.),
89,500 # 20/40 sand, 1200# Aqua Seal, 70 gal. Aqua Flow,
70# B-5 breaker, 1400# J-2 gel

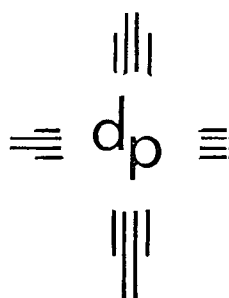
Shut well in for night.

11-10-83 Well on vacuum. T.I.H. with retrieving head to 5000'. Ran in with swab to check fluid level - 3000'. T.I.H. with tbg to 7028'. - Tag sand. Unable to establish circulation. P.O.H. Shut down.

11-11-83 GIH with retrieving head and Depek tubing bailer. Tag sand at 7028'. Clean out to bridge plug and latch onto bridge plug. P.O.H. Lay down bridge plug. G.I.H. with Depek tubing bailer. Tag sand at 7967'. Clean out to 7987'. Bailer quit working. P.O.H. Shut in for night.

- 11-12-83 Csg. 350 psi. Blew well down. Went in hole with tubing, seating nipple, tubing anchor. Land tubing as follows: 244 jts. 2-3/8" O.D., 4.7#, J-55, 8 Rd, EUE tubing. T.E. 7862.31' set at 7870' RKB with seating nipple at 7838' and tubing anchor at 6554' with 14000# tension. Nipple down BOP. Nipple up well head. Shut in. Rig down Pioneer Well Service.
- 11-13-83 Shut down.
- 11-14-83 Moved in and rigged up Basin Service swabbing unit. Casing pressure 515 psi. Tubing pressure 460 psi. Opened well. Did not unload. Swabbed 2-3/8" tubing. Fluid level first run 2800'. Made 18 swab runs. Swabbed estimated 150 bbls. frac water. No show of oil; good show of gas. Casing pressure at end of day 900 psi.
- 11-15-83 Casing pressure 975 psi. Tubing pressure 350 psi. Blew well down. Made 22 swab runs. Fluid level on first run 3200'. Swabbed estimated 175 bbls. frac fluid. Fluid level at end of day 4000'. Casing pressure 1450 psi. No show oil; slight show gas. S.D.O.N.
- 11-16-83 Casing pressure 1450 psi. Tubing pressure 450 psi. Well did not unload. Fluid level first run 3400'. Made 20 swab runs and swabbed estimated 160 bbls. frac fluid. Fluid level remained at 3400' all day. Very slight show oil last 5 runs of day. Casing pressure at end of day 1460 psi. Good gas show after 10 runs. S.D.O.N.
- 11-17-83 Casing pressure 1400 psi. Well did not unload. Made two swab runs to pit. Recovered 5 bbls. oil. Fluid level at 3400' first run. Made 15 runs to pit. - all frac fluid - estimated 120 bbls. Well kicked off at 3:00 p.m. Flowed well to tank making undetermined amount of oil. Flowed 95 bbls. total fluid in 2 hrs. 15 min. (Will drain off water 11-18-83 a.m.) Casing pressure when well kicked off 1450 psi. After flowing through open 2" line 2 hrs. 15 minutes casing pressure 900 psi. Shut well in overnight.
- 11-18-83 Casing pressure 1050 psi. Tubing pressure 925 psi. Tank gauge after draining all water 2'1" (42 bbls.) Opened well to tank. Flowed for 40 min. and died. Casing pressure came up to 1400 psi. Made 7 swab runs (fluid level 1st swab run 2400'). Well kicked off and flowed 4 hrs. Drained all frac water from tank. Gauge after draining water 7'1" (142 bbls.). Swabbed and flowed 100 bbls. oil in 7 hrs. - undetermined amount of frac water and no estimate on gas. Shut well in at 4:00 p.m. 11-18-83. Will set production unit Monday 11-21-83 to get I.P. test. Casing pressure 925 psi when well closed in.
- 11-19-83 SICP 1375 psi. SITP 900 psi. Drained all water from tank - from 7'1" to 5'4" - total oil in tank 106 bbls.

1st new
oil to tank



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- 1-4-84 Flowed well 2 hrs. thru casing. Made 47 bbl. oil and undetermined amount of water.
- 1-12-84 Flowed well 5½ hrs. thru casing. Made 170 bbls. oil, estimated 50 bbls. frac water and gas at the rate of 350 MCFPD, estimated.
- 1-20-84 Tubing pressure 1280 psi. Casing pressure 1430 psi. Tank #2 - 6". Opened up thru tubing. Would not unload. Opened up casing. Started unloading fluid in 30 min. with 590 psi on casing.

	<u>Casing</u>	<u>Tank Gauge</u>	<u>Oil Production</u>
30 min.	605 psi	1' 5"	18 bbls.
1 hr.	565 psi	2' 3½"	18 bbls.
2 hrs.	525 psi	4' 4"	41 bbls.
3 hrs.	475 psi	6' 6"	43 bbls.
4 hrs.	425 psi	8' 7½"	42 bbls.
5 hrs.	400 psi	10' 7"	39 bbls.
6 hrs.	375 psi	12' 5"	37 bbls.

238 bbls. total oil

Pitot tube at 4th hr. - 3 psi. Separator started to dump water after flowing 4 hrs. Shut well in at 4:00 p.m. 1-20-84. Gas gauge by Pitot tube was 1200 MCFGPD at end of 4 hrs. with 425 psi flowing casing pressure and 150 psi on production unit. No estimate of water production.

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1-25-84 Tubing pressure 260 psi; casing pressure 1415 psi.
 Tank #1 - 1'5" Tank #2 - 1'11"
 Flowing casing on at 11:55 a.m.

30 min.	Casing 650 psi	Tank #2 -	2' 8"
1 hr.	795 psi		3' 0"
2 hrs.	745 psi		3' 10"
3 hrs.	655 psi		4' 7"
4 hrs.	600 psi		5' 5½"
Final	600 psi		5' 7"

Left well flowing overnight.

Gauges at 7:00 a.m. 1-26-84: Tank #1 6' 0" and Tank #2 14' 0"
Well flowed 333 bbls. oil in 19 hrs. with 460 psi casing pressure
after 19 hrs. flowing on ¼" choke. Undetermined amount of water
and gas production.