

COBRA OIL & GAS CORPORATION

P. O. Box 8206 Wichita Falls, Texas 76307-8206 (940) 716-5100

DAILY DRILLING REPORT

COBRA OIL & GAS CORPORATION, OPERATOR

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GAINER UNIT #1

Lea County, New Mexico

Tatum Basin Prospect

1,294' FNL 39' FWL

Section 22, T10S-R36E

X=829769.3 Y=887935.9

PPTD: 12,500'

Patterson Drilling Co., Rig #48

08/23/97: Loc staked 1,294' FNL, 39' FWL, Section 22, T10S-R36E, Lea County, New Mexico, met w/land owner, bid location out to dirt contractors.

08/24/97:
thru No work.

08/26/97:

08/27/97: Bruton Const started bldg road & loc.

08/28/97: Started hauling caliche on road & loc.

08/30/97: Finished bldg loc, road & pits, hauled total 2400 yds caliche.

09/02/97: Cleaned out wtr well, ran pmp & set generator, tested wtr well @ 100 GPM.

09/03/97:
thru WO rig.

09/08/97:

09/09/97: Well postponed, drop from report.

11/11/97: Reran wtr well pmp, set generator.

11/12/97: Big "D" Equip lined res pit, layed 3" wtr line, wtr mtr reading 00992900 gals.

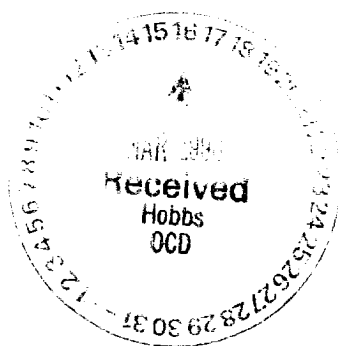
11/13/97: MI, RU Patterson Drilling Rig #48.

11/14/97: RU Patterson Drilling Rig #48.

11/15/97: **SPUD WELL @ 2:30 PM CST, 11/14/97.**

TD 398'. DAY 1, surf rock/red bed, Mde 398' in last 24 hrs, WOC. **DEV SURV:** See chart below 11/17/97. **PUMP #1**, DB700, 5 $\frac{1}{2}$ " x 16", SPM 60, GPM 320, PP 900 psi, WOB all @ 110 RPM. **BIT #1**, 17 $\frac{1}{2}$ ", retip, rerun, S/N LM399, Jets 11,11,11, In @ surf, Mde 398' in 6.5 hrs, Out @ 398', Grade 5-5-I. **MUD:** Spud, MW 8.7#, Vis 35, pH 10. Used 35 sx gel, 5 sx lm, 15 sx paper. **TIME:** 7.5 hrs RU, mix mud, 3.5 drld, .25 hr surv, 3 hrs drlg, TD 17 $\frac{1}{2}$ " hole @ 398', .5 hr circ, .25 hr surv, 2 hrs TOO, LD rmr, 2.5 hrs RU, run csg, 2.75 hrs RU BJ, thaw out trk, .75 hr cmt csg, 1 hr WOC. DWC \$72,900, CWC \$72,900.

Ran csg as follows on next page.



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11/15/97: Ran csg as follows.

(cont'd.)

	MAKE UP LENGTH	DEPTH FROM DATUM TO TOP OF ITEM
9 jts - 13 $\frac{3}{8}$ " 48# H40 8rd STC new csg	357.52'	- 6.00'
1 - 13 $\frac{3}{8}$ " Weatherford insert float	0.00'	
1 jt - 13 $\frac{3}{8}$ " 48# H40 8rd STC new csg shoe jt	45.23'	351.52'
1 - 13 $\frac{3}{8}$ " Weatherford guide shoe	.81'	396.75'
Total Length of String	403.56'	
Less Cut-Off Piece	26.50'	
Plus Datum to T/Cut-Off Csg	20.50'	
Casing Set @	397.56'	

Notified NMOCD answering serv, Debbie, @ 9:30 PM, 11/14/97, of cmt surf csg, BJ Services cmted csg w/415 sx Class "C" + 2% CaCl₂ mixed @ 14.8 ppg, yield 1.34 cu ft/sx, good circ throughout job, circ 36 bbls (150 sx) cmt to surf, used 3 Weatherford bow type cent every 3rd jt from btm, PD @ 6:00 AM CST, 11/15/97.

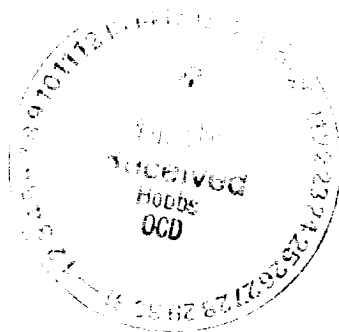
11/16/97: **TD 757'. DAY 2**, anhy/red bed, Mde 359' in last 24 hrs, drlg. **DEV SURV**: None. **BHA**: Bit, sh sub, monel, XO, DC, stab, 18 DC = 621.33'. **PUMP #1**, DB700, 5 $\frac{1}{2}$ " x 16", SPM 60, GPM 320, PP 1100 psi, WOB 60,000# @ 80 RPM. **BIT #2**, 12 $\frac{1}{4}$ ", HTC, R-1, S/N P50CS, Jets 11,11,11, In @ 398', Mde 359' in 6.5 hrs. **MUD**: FW/native, MW 8.6#, Vis 34, pH 11. Used 6 sx paper. **TIME**: 5 hrs WOC, 5.5 hrs cut off, weld on, NU, 2 hrs TIH, 2.5 hrs drlg cmt, .25 hr lost 500 psi, BOP, .75 hr drld cmt & shoe, 3.25 hrs drld, 1 hr repair centrifugal, 1.5 hrs drld, .5 hr unplug FL, 1.75 hrs drlg. **DWC** \$18,550, **CWC** \$91,450.

11/17/97: **TD 2,248'. DAY 3**, anhy/red bed, Mde 1491' in last 24 hrs, drlg. **DEV SURV**: To follow. **BHA**: Bit, sh sub, monel, XO, DC, stab, 18 DC = 621.33'. **PUMP #1**, DB700, 5 $\frac{1}{2}$ " x 16", SPM 60, GPM 320, PP 1300 psi, WOB 60,000# @ 80 RPM. **BIT #2**, 12 $\frac{1}{4}$ ", HTC, R-1, S/N P50CS, Jets 11,11,11, In @ 398', Mde 1850' in 29.5 hrs. **MUD**: Native/oil, MW 9.5#, Vis 35, pH 11, CI 1900. Used 100 BO, 13 sx paper, 20 sx lm. **DMC** \$489, **CMC** \$489. **TIME**: 23 hrs drld, 1 hr surv. **DWC** \$41,000, **CWC** \$132,450.

MEASURED DEPTH feet	DRIFT ANGLE deg	DRIFT DIRECTION	COURSE LENGTH feet	TRUE VERTICAL DEPTH feet	VERTICAL SECTION feet	RECTANGULAR COORDINATES feet	DOGLEG SEVERITY dg/100'
171	0.75	N 50.00 W	171	171.0	0.7	0.7 N 0.9 W	0.44
382	0.75	N 21.00 E	211	211.0	2.9	2.9 N 1.4 W	0.41
747	0.50	N 2.00 E	365	747.0	6.7	5.7 N 0.5 W	0.09
1,226	0.50	-0-	479	1,225.9	10.9	10.9 N 0.4 W	0.00
1,736	0.25	S 55.00 W	510	1,735.9	12.5	12.5 N 1.3 W	0.13

Final closure direction N 6.16 W, final closure distance 12.556'.

11/18/97: **TD 2,715'. DAY 4**, anhy/salt, Mde 467' in last 24 hrs, drlg. **DEV SURV**: See chart below. **BHA**: Bit, sh sub, monel, XO, DC, stab, 18 DC = 621.33'. **PUMP #1**, DB700, 5 $\frac{1}{2}$ " x 16", SPM 60, GPM 320, PP 1400 psi, WOB 35,000#-50,000# @ 60 RPM. **BIT #2**, 12 $\frac{1}{4}$ ", HTC, R-1, S/N P50CS, Jets 11,11,11, In @ 398', Mde 2057' in 39.75 hrs, Out @ 2455', Grade 6-8-l. **BIT #3**, 12 $\frac{1}{4}$ ", WM, 53CF, S/N O11568, Jets 11,11,11, In @ 2455', Mde 260' in 7.25 hrs. **MUD**: Native/oil, MW 10#, Vis 34, pH 11. Used 11 sx paper, 10 sx



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PPTD: 12,500'

Patterson Drilling Co., Rig #48

11/18/97: Im. C/W \$489. **TIME:** 1 hr drld, .5 hr surv, 5.75 hrs drld, .5 hr rig rep, 2.25 hrs drld, .5 hr surv, 1.25 hrs drld, 1.75 hrs TOOH w/bit #2, 2.25 hrs TIH w/bit #3, .25 hr wash to btm, 6 hrs drld, .75 hr surv, 1.25 hrs drld. DWC \$16,900, CWC \$149,350.

MEASURED	DRIFT	DRIFT	COURSE	TRUE	VERTICAL	RECTANGULAR		DOGLEG
DEPTH	ANGLE	DIRECTION	LENGTH	VERTICAL	SECTION	COORDINATES		SEVERITY
<u>feet</u>	<u>deg</u>	<u>deg</u>	<u>feet</u>	<u>feet</u>	<u>feet</u>	<u>feet</u>		<u>dg/100'</u>
2,217	1.25	S 53.00 E	481	2,216.9	8.7	8.7 N	2.0 E	0.28
2,377	1.00	S 56.00 E	160	2,376.9	6.8	6.9 N	4.5 E	0.16
2,632	0.75	S 74.00 E	255	2,631.8	4.9	5.2 N	8.0 E	0.14

Final closure direction N 56.98 W, final closure distance 9.522'.

11/19/97: **TD 3,341'. DAY 5**, anhy/salt, Mde 626' in last 24 hrs, drlg. **DEV SURV:** See chart below. **BHA:** Bit, sh sub, monel, XO, DC, stab, 18 DC = 621.33'. **PUMP #1**, DB700, 5 $\frac{1}{2}$ " x 16", SPM 60, GPM 320, PP 1400 psi, WOB 35,000#-60,000# @ 60 RPM. **BIT #3**, 12 $\frac{1}{4}$ ", WM, 53CF, S/N O11568, Jets 11,11,11, In @ 2455', Mde 886' in 30.5 hrs. **MUD:** Native/oil, MW 10#, Vis 37, Slids 5.9%, Oil 2%, pH 11, CI 155,000, Gels 4/13, PV 6, YP 10. Used 8 sx paper, 15 sx lm, 6 gals defoamer. DMC \$292, CMC \$781. **TIME:** 1 hr drld, .25 hr RS, 8.75 hrs drld, .5 hr surv, 13.5 hrs drld. DWC \$17,300, CWC \$166,650.

MEASURED DEPTH feet	DRIFT ANGLE deg	DRIFT DIRECTION deg	COURSE LENGTH feet	TRUE VERTICAL DEPTH feet	VERTICAL SECTION feet	RECTANGULAR COORDINATES feet	DOGLEG SEVERITY dg/100'
2,949	0.50	S 75.00 E	317	2,948.8	3.9	4.3 N 11.3 E	0.08

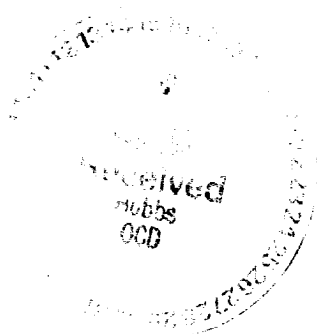
Final closure direction N 69.37 W, final closure distance 12.089'.

11/20/97: **TD 3,765'. DAY 6**, anhy/salt, Mde 424' in last 24 hrs, drlg. **DEV SURV:** See chart below. **BHA:** Bit, sh sub, monel, XO, DC, stab, 18 DC = 621.33'. **PUMP #1**, DB700, 5 $\frac{1}{2}$ " x 16", SPM 60, GPM 320, PP 1400 psi, WOB 50,000#-60,000# @ 60 RPM. **BIT #3**, 12 $\frac{1}{4}$ ", WM, 53CF, S/N O11568, Jets 11,11,11, In @ 2455', Mde 1310' in 53.25 hrs. **MUD:** Native/oil, MW 10#, Vis 35, Oil 2%, pH 11, CI 155,000. Used 6 sx paper, 17 sx lm, 2 gals defoamer. CMC \$781. **TIME:** 3.25 hrs drld, .5 hr surv, 4.25 hrs drld, .75 hr prime pmp, jet pits, 15.25 hrs drld. DWC \$13,000, CWC \$179,650.

MEASURED DEPTH feet	DRIFT ANGLE deg	DRIFT DIRECTION deg	COURSE LENGTH feet	TRUE		RECTANGULAR		DOGLEG SEVERITY dg/100'
				VERTICAL DEPTH feet	VERTICAL SECTION feet	COORDINATES feet		
3,364	1.25	N 72.00 E	415	3,363.8	4.7	5.2 N	17.4 E	0.21

Final closure direction N 73.36 E, final closure distance 18.127'.

11/21/97: **TD 4,116'. DAY 7**, dolo/lm, Mde 351' in last 24 hrs, drlg. **DEV SURV:** See chart below. **BHA:** Bit, sh sub, monel, XO, DC, stab, 18 DC = 621.33'. **PUMP #1**, DB700, 5 $\frac{1}{2}$ " x 16", SPM 60, GPM 320, PP 1500 psi, WOB 60,000# @ 60 RPM. **BIT #3**, 12 $\frac{1}{4}$ ", WM, 53CF, S/N O11568, Jets 11,11,11, In @ 2455', Mde 1661' in 76.75 hrs. **MUD:** Native/oil, MW 10.5#, Vis 36, Slids 5.9%, Oil 2%, pH 11, CI 169,000, Gels 4/11, PV 4, YP 9. Used 6 sx paper, 50 sx starch, 11 sx lm, 2 gals defoamer. DMC \$795, CMC \$1666. **TIME:** 1.25 hrs drld, .5 hr surv, 22.25 hrs drld. DWC \$11,850, CWC \$190,500.



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PPTD: 12,500'

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11/21/97: Survey follows.

{cont'd.}

MEASURED DEPTH feet	DRIFT ANGLE deg	DRIFT DIRECTION deg	COURSE LENGTH feet	TRUE VERTICAL DEPTH feet	VERTICAL SECTION feet	RECTANGULAR COORDINATES feet	DOGLEG SEVERITY dg/100'
3,747	1.00	S 65.00 E	383	3,746.7	4.3	5.1 N 24.4 E	0.22

Final closure direction N 78.25 E, final closure distance 24.892'.

11/22/97: **TD 4,292'. DAY 8**, dolo, Mde 176' in last 24 hrs, drlg. **DEV SURV**: See chart below 11/23/97. **BHA**: Bit, sh sub, monel, XO, DC, stab, 18 DC = 621.33'. **PUMP #1**, DB700, 5 $\frac{1}{2}$ " x 16", SPM 60, GPM 320, PP 1500 psi, WOB 60,000# @ 60 RPM. **BIT #3**, 12 $\frac{1}{4}$ ", WM, 53CF, S/N O11568, Jets 11,11,11, In @ 2455', Mde 1837' in 99.75 hrs. **MUD**: Native/oil, MW 10.5#, Vis 35, Slds 5.5%, Oil 2%, pH 11, Cl 169,000, Gels 4/11, PV 4, YP 9. Used 2 sx paper, 20 sx starch, 4 sx lm. **DMC** \$793, **CMC** \$2459. **TIME**: 2.25 hrs drld, .25 hr surv, 1.25 hrs drld, .25 hr ran fluid caliper, 4.75 hrs drld, .5 hr surv, 14.75 hrs drld. **CWC** \$166,650.

11/23/97: **TD 4,264'. DAY 9**, dolo, Mde 0' in last 24 hrs, cmtg csg. **DEV SURV**: See chart below. **BHA**: Bit, sh sub, monel, XO, DC, stab, 18 DC = 621.33'. **PUMP #1**, DB700, 5 $\frac{1}{2}$ " x 16". **BIT #3**, 12 $\frac{1}{4}$ ", WM, 53CF, S/N O11568, Jets 11,11,11, In @ 2455', Mde 1809' in 100.5 hrs, Out @ 4264'. **MUD**: Not listed. Used no mud additives. **DMC** \$994, **CMC** \$3553. **TIME**: .75 hr drld, .5 hr surv, 2.5 hrs circ, 5.5 hrs TOOH, LD DC (correction-31'), .5 hr RU csg crew, 4.5 hrs run csg, 1.25 hrs RU, circ, .5 hr cmt csg, pmp trk broke, 5.5 hrs circ out 250 sx cmt, 2.5 hrs cmt csg. **CWC** \$166,650.

MEASURED DEPTH feet	DRIFT ANGLE deg	DRIFT DIRECTION deg	COURSE LENGTH feet	TRUE VERTICAL DEPTH feet	VERTICAL SECTION feet	RECTANGULAR COORDINATES feet	DOGLEG SEVERITY dg/100'
4,159	1.25	S 53.00 E	412	4,158.6	-0.1	0.8 N 31.2 E	0.08
4,224	1.00	S 40.00 E	65	4,223.6	-1.0	0.0 S 32.1 E	0.55

Final closure direction S 89.97 E, final closure distance 32.149'.

Ran csg as follows.

	MAKE UP LENGTH	DEPTH FROM DATUM TO TOP OF ITEM
96 jts - 8 $\frac{5}{8}$ " 32# J55 8rd STC new Newport ERW csg	4,214.40'	- 40.80'
1 - 8 $\frac{5}{8}$ " Weatherford float collar	1.20'	4,173.60'
2 jts - 8 $\frac{5}{8}$ " 32# J55 8rd STC new csg shoe jts	88.77'	4,174.80'
1 - 8 $\frac{5}{8}$ " Weatherford float shoe	1.45'	4,263.57'
Total Length of String	4,305.82'	
Less Cut-Off Piece	60.30'	
Plus Datum to T/Cut-Off Csg	19.50'	
Casing Set @	4,265.02'	

B.J. Services cmtd cg w/**LEAD** of 1600 sx 35/65 Poz "C" w/5% salt, $\frac{1}{4}$ "/sx cello mixed @ 12.7 ppg, yield 1.94 cu ft/sx, **TAIL** of 300 sx "C" w/1% CaCl₂ mixed @ 14.8 ppg, yield 1.33 cu ft/sx, used 8 Weatherford bow typ cent EOJ from btm, circ 567 sx cmt to surf, PD @ 6:00 AM, 11/23/97.



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PPTD: 12,500'

Patterson Drilling Co., Rig #48

11/24/97: **TD 4,307'.** DAY 10, dolo, Mde 43' in last 24 hrs, drlg. **DEV SURV:** None. **BHA:** Bit, BS, monel, DC, stab, DC, stab, 24 DC. **PUMP #1,** DB700, 5 $\frac{1}{2}$ " x 16", SPM 60, GPM 320, PP 1700 psi, WOB 50,000# @ 60 RPM. **BIT #4,** 7 $\frac{7}{8}$ ", HTC, K+EP4452, S/N L07YX, Jets 11,11,11, In @ 4264', Mde 43' in 1.75 hrs. **MUD:** Cut brine, MW 9#, Vis 28, pH 11, CI 1700. Used no mud additives. CMC \$3553. **TIME:** 6 hrs ND, set slips, inst head, 4.75 hrs NU BOP, 5 hrs test BOP to 3000 psi, OK, hydrl to 1500 psi, 2 hrs PU BHA, 2 hrs TIH, 2.25 hrs drld cmt, plug, float & shoe, .25 hr test csg shoe, 1.75 hrs drld form. (11/22/97 DWC \$6500, CWC \$197,000, 11/23/97 DWC \$60,800, CWC \$257,800), DWC \$39,700, CWC \$297,500.

11/25/97: **TD 4,900'.** DAY 11, dolo/lm, Mde 593' in last 24 hrs, drlg. **DEV SURV:** See chart below. **BHA:** Bit, BS, monel, DC, stab, DC, stab, 24 DC. **PUMP #1,** DB700, 5 $\frac{1}{2}$ " x 16", SPM 60, GPM 320, PP 1700 psi, WOB 50,000# @ 60 RPM. **BIT #4,** 7 $\frac{7}{8}$ ", HTC, K+EP4452, S/N L07YX, Jets 11,11,11, In @ 4264', Mde 636' in 24.75 hrs. **MUD:** Cut brine, MW 9.1#, Vis 28, pH 11, CI 65,000. Used 60 sx gel, 12 sx paper, 6 sx caustic. DMC \$35, CMC \$3588. **TIME:** .75 hr drld, .25 hr RS, 16 hrs drld, .5 hr surv, .25 hr lower kelly valve, 6.25 hrs drld. DWC \$16,500, CWC \$314,000.

MEASURED DEPTH feet	DRIFT ANGLE deg	DRIFT DIRECTION deg	COURSE LENGTH feet	TRUE		RECTANGULAR COORDINATES feet	DOGLEG SEVERITY dg/100'
				VERTICAL DEPTH feet	VERTICAL SECTION feet		
4,703	0.50	N 80.00 E	479	4,702.6	- 4.0	2.9 S 36.9 E	0.18

Final closure direction S 85.57 E, final closure distance 37.004'.

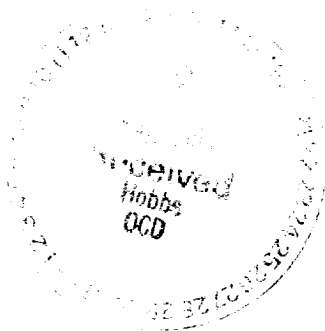
11/26/97: **TD 5,541'.** DAY 12, dolo, Mde 641' in last 24 hrs, drlg. **DEV SURV:** See chart below. **BHA:** Bit, BS, monel, DC, stab, DC, stab, 24 DC. **PUMP #1,** DB700, 5 $\frac{1}{2}$ " x 16", SPM 60, GPM 320, PP 1700 psi, WOB 50,000# @ 60 RPM. **BIT #4,** 7 $\frac{7}{8}$ ", HTC, K+EP4452, S/N L07YX, Jets 11,11,11, In @ 4264', Mde 1277' in 48 hrs. **MUD:** Cut brine, MW 9.1#, Vis 28, pH 11, CI 59,000. Used 5 sx paper, 14 sx caustic. CMC \$3588. **TIME:** 3.25 hrs drld, .25 hr RS, 9 hrs drld, .5 hr surv, 11 hrs drld. DWC \$17,700, CWC \$331,700.

MEASURED DEPTH feet	DRIFT ANGLE deg	DRIFT DIRECTION deg	COURSE LENGTH feet	TRUE		RECTANGULAR COORDINATES feet	DOGLEG SEVERITY dg/100'
				VERTICAL DEPTH feet	VERTICAL SECTION feet		
5,214	1.50	S 71.00 W	511	5,213.5	- 5.6	4.6 S 32.8 E	0.39

Final closure direction S 81.93 E, final closure distance 33.093'.

11/27/97: **TD 6,182'.** DAY 13, dolo, Mde 641' in last 24 hrs, drlg. **DEV SURV:** See chart below 12/01/97. **BHA:** Bit, BS, monel, DC, stab, DC, stab, 24 DC. **PUMP #1,** DB700, 5 $\frac{1}{2}$ " x 16", SPM 60, GPM 320, PP 1700 psi, WOB 50,000# @ 60 RPM. **BIT #4,** 7 $\frac{7}{8}$ ", HTC, K+EP4452, S/N L07YX, Jets 11,11,11, In @ 4264', Mde 1918' in 71.25 hrs. **MUD:** Cut brine, MW 9.1#, Vis 28, pH 11, CI 59,000. Used 6 sx paper, 17 sx caustic, 35 sx gel. CMC \$3588. **TIME:** 6.5 hrs drld, .25 hr RS, 1.75 hrs drld, .5 hr surv, 15 hrs drld. DWC \$18,200, CWC \$349,900.

11/28/97: **TD 6,620'.** DAY 14, dolo, Mde 438' in last 24 hrs, TOO. **DEV SURV:** See chart below 12/01/97. **BHA:** Bit, BS, monel, DC, stab, DC, stab, 24 DC. **PUMP #1,** DB700, 5 $\frac{1}{2}$ " x 16", SPM 60, GPM 320, PP 1850 psi, WOB 50,000# @ 60 RPM. **BIT #4,** 7 $\frac{7}{8}$ ", HTC, K+EP4452, S/N L07YX, Jets 11,11,11, In @ 4264', Mde 2358' in 93.75 hrs. **MUD:** Cut brine, MW 9.1#, Vis 28, pH 11, CI 59,000. Used 4 sx paper, 9 sx caustic.



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X=829769.3 Y=887935.9
PPTD: 12,500'
Patterson Drilling Co., Rig #48

11/28/97: CMC \$3588. TIME: 2.25 hrs drld, .5 hr surv, 11.75 hrs drld, .5 hr surv, 8.5 hrs drld, .5 hr trip. DWC (cont'd.) \$12,400, CWC \$362,300.

11/29/97: TD 6,780'. DAY 15, dolo, Mde 160' in last 24 hrs, drlg. DEV SURV: None. BHA: Bit, BS, monel, 26 DC = 807.99'. PUMP #1, DB700, 5 $\frac{1}{2}$ " x 16", SPM 60. BIT #4, 7 $\frac{7}{8}$ ", HTC, K+EP4452, S/N L07YX, Jets 11,11,11, In @ 4264', Mde 2496' in 102 hrs, Out @ 6760', Grade 4-3-L. BIT #5, 7 $\frac{7}{8}$ ", HTC, EP4396, S/N E34YC, Jets 12,12,12, In @ 6760', Mde 20' in 1.5 hrs. MUD: Cut brine, MW 9.2#, Vis 29, pH 11, CI 73,000. Used 3 sx paper. CMC \$3588. TIME: 3 hrs trip for hole in pipe, 2 hrs drld, .25 hr RS, 5.75 hrs drld, 3 hrs trip for hole in pipe, .5 hr drld, 3 hrs trip for bit, 2 hrs work on cathead, 3 hrs TIH, 1.5 hrs drld. DWC \$5,500, CWC \$367,800.

11/30/97: TD 7,185'. DAY 16, dolo/lm/sd, Mde 405' in last 24 hrs, drlg. DEV SURV: See chart below 12/01/97. BHA: Bit, BS, monel, 26 DC = 807.99'. PUMP #1, DB700, 5 $\frac{1}{2}$ " x 16", SPM 60, PP 1500 psi, WOB 50,000# @ 60 RPM. BIT #5, 7 $\frac{7}{8}$ ", HTC, EP4396, S/N E34YC, Jets 12,12,12, In @ 6760', Mde 425' in 24.25 hrs. MUD: Cut brine, MW 9.2#, Vis 29, pH 11, CI 73,000. Used 6 sx paper, 3 sx caustic. CMC \$3588. TIME: 5 hrs drld, .25 hr RS, 2.75 hrs drld, .5 hr surv-misrun, 1.5 hrs drld, .5 hr surv, 13.5 hrs drld. DWC \$12,000, CWC \$379,800.
Remarks: Sweep @ 6918', 7012', 7140'.

12/01/97: TD 7,524'. DAY 17, dolo, Mde 339' in last 24 hrs, drlg. DEV SURV: See chart below. BHA: Bit, BS, monel, 26 DC = 807.99'. PUMP #1, DB700, 5 $\frac{1}{2}$ " x 16", SPM 60, GPM 320, PP 1500 psi, WOB 50,000# @ 60 RPM. BIT #5, 7 $\frac{7}{8}$ ", HTC, EP4396, S/N E34YC, Jets 12,12,12, In @ 6760', Mde 764' in 43.5 hrs. MUD: Cut brine, MW 9.2#, Vis 29, pH 11, CI 73,000. Used 2 sx caustic. CMC \$3588. TIME: 4.75 hrs drld, .25 hr RS, 10.5 hrs drld, .5 hr surv, 2.25 hrs drld, .75 hr check pmp, pmp soft line, 2 hrs TOOH, 1.25 hrs TIH, 1.75 hrs drld. DWC \$9,800, CWC \$389,600.
Remarks: Started mudding up.

MEASURED DEPTH feet	DRIFT ANGLE deg	DRIFT DIRECTION deg	COURSE LENGTH feet	TRUE VERTICAL DEPTH feet	VERTICAL SECTION feet	RECTANGULAR COORDINATES feet	DOGLEG SEVERITY dg/100'
5,693	0.50	N 35.00 W	479	5,692.5	- 5.7	5.0 S 25.6 E	0.30
6,190	1.50	N 5.00 E	497	6,189.4	2.5	3.3 N 25.0 E	0.23
6,428	0.50	N 50.00 W	238	6,427.3	6.3	7.1 N 24.4 E	0.54
6,931	1.50	N 14.00 E	503	6,930.3	14.1	14.9 N 24.3 E	0.27
7,410	0.50	S 70.00 E	479	7,409.2	19.4	20.2 N 27.8 E	0.34

Final closure direction N 54.00 E, final closure distance 34.400'.

12/02/97: TD 7,829'. DAY 18, dolo/sh, Mde 305' in last 24 hrs, drlg. DEV SURV: None. BHA: Bit, BS, monel, 26 DC = 807.99'. PUMP #1, DB700, 5 $\frac{1}{2}$ " x 16", SPM 60, GPM 320, PP 1500 psi, WOB 50,000# @ 60 RPM. BIT #5, 7 $\frac{7}{8}$ ", HTC, EP4396, S/N E34YC, Jets 12,12,12, In @ 6760', Mde 1069' in 63.5 hrs. MUD: Salt gel/oil, MW 9.8#, Vis 40, Slds 2%, pH 11, CI 101,000. Used 137 sx gel, 8 sx caustic, 100 BO. DMC \$1651, CMC \$4554. TIME: 1.75 hrs drld, .25 hr pmp softline, 3.75 hrs trip, 18.25 hrs drld. DWC \$10,550, CWC \$400,150.

12/03/97: TD 8,215'. DAY 19, Abo, Mde 386' in last 24 hrs, drlg. DEV SURV: See chart below. BHA: Bit, BS,

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GAINER UNIT #1

Lea County, New Mexico

Tatum Basin Prospect

1,294' FNL 39' FWL

Section 22, T10S-R36E

X=829769.3 Y=887935.9

PPTD: 12,500'

Patterson Drilling Co., Rig #48

12/03/97: monel, 26 DC = 807.99'. **PUMP #1**, DB700, 5 $\frac{1}{2}$ " x 16", SPM 60, GPM 320, PP 1500 psi, WOB 50,000# @ 60 RPM. **BIT #5**, 7 $\frac{7}{8}$ ", HTC, EP4396, S/N E34YC, Jets 12,12,12, In @ 6760', Mde 1455' in 86.75 hrs. **MUD**: Salt gel/oil, MW 9.7#, Vis 38, Slds 5.4%, Oil 3%, pH 11, CI 155,000, Gels 6/15, PV 7, YP 12. Used 2 sx caustic. DMC \$146, CMC \$4700. **TIME**: .75 hr surv, 23.25 hrs drld. DWC \$11,300, CWC \$411,450.

MEASURED DEPTH feet	DRIFT ANGLE deg	DRIFT DIRECTION deg	COURSE LENGTH feet	TRUE		RECTANGULAR COORDINATES feet	DOGLEG SEVERITY dg/100'
				VERTICAL DEPTH feet	VERTICAL SECTION feet		
7,793	0.25	N 45.00 W	383	7,792.2	19.4	20.2 N 28.8 E	0.19

Final closure direction N 54.91 E, final closure distance 35.208'.

12/04/97: **TD 8,542'. DAY 20**, Abo, Mde 327' in last 24 hrs, drlg. **DEV SURV**: See chart below. **BHA**: Bit, BS, monel, 26 DC = 807.99'. **PUMP #1**, DB700, 5 $\frac{1}{2}$ " x 16", SPM 60, GPM 320, PP 1500 psi, WOB 50,000# @ 60 RPM. **BIT #5**, 7 $\frac{7}{8}$ ", HTC, EP4396, S/N E34YC, Jets 12,12,12, In @ 6760', Mde 1782' in 109.5 hrs. **MUD**: Salt gel/oil, MW 9.8#, Vis 36, Slds 2.6%, Oil 5.5%, pH 11, CI 154,000, Gels 5/12, PV 6, YP 8. Used 108 sx gel, 6 sx caustic, 2 sx desco, 10 gals defoamer, 80 BO. DMC \$29, CMC \$4729. **TIME**: .25 hr drlg, .25 hr RS, 7.25 hrs drlg, .5 hr surv, .25 hr wash to btm, 2.75 hrs drlg, .25 hr pmp soft line, 12.5 hrs drlg. DWC \$9500, CWC \$420,950.

MEASURED DEPTH feet	DRIFT ANGLE deg	DRIFT DIRECTION deg	COURSE LENGTH feet	TRUE		RECTANGULAR COORDINATES feet	DOGLEG SEVERITY dg/100'
				VERTICAL DEPTH feet	VERTICAL SECTION feet		
8,272	0.50	N 50.00 E	479	8,271.2	21.4	22.3 N 29.7 E	0.12

Final closure direction N 53.05 E, final closure distance 37.130'.

12/05/97: **TD 8,830'. DAY 21**, do/sh, Mde 288' in last 24 hrs, TOH. **DEV SURV**: See chart below. **BGG**: 5 units, CG: 5 units. **BHA**: Bit, BS, monel, 26 DC = 807.99'. **PUMP #1**, DB700, 5 $\frac{1}{2}$ " x 16", SPM 60, GPM 320, PP 1500 psi, WOB 50,000# @ 60 RPM. **PUMP #2**, DB-550, 5 $\frac{1}{2}$ " x 16". **BIT #5**, 7 $\frac{7}{8}$ ", HTC, EP4396, S/N E34YC, Jets 12,12,12, In @ 6760', Mde 2070' in 131.25 hrs, Out @ 8830'. **MUD**: Salt gel/oil, MW 9.8#, Vis 38, Slds 3.6%, Oil 5%, pH 11, Gels 5/12, PV 6, YP 8. Used 15 sx gel, 2 sx caustic, 3 gals defoamer. CMC \$4729. **TIME**: 6.5 hrs drlg, .25 hr RS, 14.75 hrs drlg, .5 hr surv NP, .5 hr drlg, .5 hrs surv, 1 hr TOH. DWC \$9,500, CWC \$430,450.

MEASURED DEPTH feet	DRIFT ANGLE deg	DRIFT DIRECTION deg	COURSE LENGTH feet	TRUE		RECTANGULAR COORDINATES feet	DOGLEG SEVERITY dg/100'
				VERTICAL DEPTH feet	VERTICAL SECTION feet		
8,770	0.50	S 85.00 E	498	8,769.2	22.5	23.5 N 33.5 E	0.08

Final closure direction N 54.92 E, final closure distance 40.938'.

12/06/97: **TD 9,016'. DAY 22**, do, Mde 180' in last 24 hrs, drlg. **DEV SURV**: None. **BGG**: 5 units, CG: 7 units. **BHA**: Bit, BS, monel, 26 DC = 807.99'. **PUMP #1**, DB700, 5 $\frac{1}{2}$ " x 16", SPM 60, GPM 320, PP 1500 psi, WOB 50,000# @ 60 RPM. **PUMP #2**, DB-550, 5 $\frac{1}{2}$ " x 16". **BIT #6**, 7 $\frac{7}{8}$ ", HTC, EP44, S/N N94YB, Jets 12,12,12, In @ 8830', Mde 186' in 16.5 hrs. **MUD**: Salt gel/oil/starch, MW 10.1#, Vis 43, WI 15.2, Slds 5.9%, Oil 4%, pH 11, CI 148,000, Gels 6/13, PV 10, YP 14. Used 77 sx starch, 2 sx caustic, 5 sx desco.

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GAINER UNIT #1

Lea County, New Mexico

Tatum Basin Prospect

1,294' FNL 39' FWL

Section 22, T10S-R36E

X=829769.3 Y=887935.9

PPTD: 12,500'

Patterson Drilling Co., Rig #48

12/06/97: DMC \$2454, CMC \$8453. **TIME:** 6 hrs bit trip, .75 hr inst rot head, .25 hr RS, .5 hr wash to btm, 16.5 hrs drlg. **DWC** \$9,250, **CWC** \$439,700.
(cont'd.) Remarks: Start mud up @ 8916'.

12/07/97: **TD 9,272'. DAY 23**, Wolfcamp, Mde 256' in last 24 hrs, drlg. **DEV SURV:** None. **BGG:** 18 units, CG: 25 units. **BHA:** Bit, BS, monel, 26 DC = 807.99'. **PUMP #1**, DB700, 5 $\frac{1}{2}$ " x 16", SPM 60, PP 1500 psi, WOB 50,000# @ 60 RPM. **PUMP #2**, DB-550, 5 $\frac{1}{2}$ " x 16". **BIT #6**, 7 $\frac{7}{8}$ ", HTC, EP44, S/N N94YB, Jets 12,12,12, In @ 8830', Mde 442' in 40.25 hrs. **MUD:** Salt gel/oil/starch, MW 10#, Vis 42, WI 20, Slids 5.9%, Oil 4%, pH 11, CI 148,000, Gels 6/13, PV 10, YP 14. Used 3 cans aldacide, 30 gals defoamer, 8 sx caustic. **CMC** \$8453. **TIME:** 7.5 hrs drlg, .25 hr RS, 16.25 hrs drlg. **DWC** \$9,800, **CWC** \$449,500.

12/08/97: **TD 9,532'. DAY 24**, Im, Mde 260' in last 24 hrs, drlg. **DEV SURV:** See chart below. **BGG:** 20 units. **BHA:** Bit, BS, monel, 26 DC = 807.99'. **PUMP #1**, DB700, 5 $\frac{1}{2}$ " x 16", SPM 60, GPM 320, PP 1500 psi, WOB 50,000# @ 60 RPM. **PUMP #2**, DB-550, 5 $\frac{1}{2}$ " x 16". **BIT #6**, 7 $\frac{7}{8}$ ", HTC, EP44, S/N N94YB, Jets 12,12,12, In @ 8830', Mde 702' in 63.75 hrs. **MUD:** Salt gel/oil/starch, MW 10#, Vis 38, WI 18.8, Slids 5.6%, Oil 3%, pH 11, CI 119,000, Gels 4/13, PV 8, YP 12. Used 3 cans aldacide, 2 gals defoamer, 8 sx caustic, 15 sx starch. **DMC** \$1248, **CMC** \$9700. **TIME:** 3.5 hrs drlg, .5 hr surv, 20 hrs drlg. **DWC** \$9,950, **CWC** \$459,450.

MEASURED DEPTH feet	DRIFT ANGLE deg	DRIFT DIRECTION deg	COURSE LENGTH feet	TRUE VERTICAL DEPTH feet	VERTICAL SECTION feet	RECTANGULAR COORDINATES feet	DOGLEG SEVERITY dg/100'
9,263	0.50	N 47.00 E	493	9,262.2	23.7	24.8 N 37.2 E	0.08

Final closure direction N 56.31 E, final closure distance 44.727'.

12/09/97: **TD 9,775'. DAY 25**, Im/sh, Mde 243' in last 24 hrs, drlg. **DEV SURV:** None. **BGG:** 15 units. **BHA:** Bit, BS, monel, 26 DC = 807.99'. **PUMP #1**, DB700, 5 $\frac{1}{2}$ " x 16", SPM 60, GPM 320, PP 1500 psi, WOB 50,000# @ 60 RPM. **PUMP #2**, DB-550, 5 $\frac{1}{2}$ " x 16". **BIT #6**, 7 $\frac{7}{8}$ ", HTC, EP44, S/N N94YB, Jets 12,12,12, In @ 8830', Mde 945' in 87.5 hrs. **MUD:** Salt gel/oil/starch, MW 9.8+ #, Vis 41, WI 20, Slids 7.6%, Oil 3%, pH 11, CI 100,000, Gels 5/11, PV 6, YP 12. Used 3 cans aldacide, 3 gals defoamer, 7 sx caustic, 55 sx starch, 23 sx gel. **DMC** \$321, **CMC** \$10,021. **TIME:** 2.5 hrs drlg, .25 hr RS, 21.25 hrs drlg. **DWC** \$8,650, **CWC** \$468,100.

12/10/97: **TD 10,005'. DAY 26**, Im/sh, Mde 230' in last 24 hrs, drlg. **DEV SURV:** See chart below. **BGG:** 12 units. **BHA:** Bit, BS, monel, 26 DC = 807.99'. **PUMP #1**, DB700, 5 $\frac{1}{2}$ " x 16", SPM 60, GPM 320, PP 1500 psi, WOB 50,000# @ 60 RPM. **PUMP #2**, DB-550, 5 $\frac{1}{2}$ " x 16". **BIT #6**, 7 $\frac{7}{8}$ ", HTC, EP44, S/N N94YB, Jets 12,12,12, In @ 8830', Mde 1175' in 110.5 hrs. **MUD:** Salt gel/oil/starch, MW 9.9#, Vis 41, WI 16, Slids 5.4%, Oil 3%, pH 11, CI 102,000, Gels 3/7, PV 10, YP 7. Used 3 cans aldacide, 2 gals defoamer, 5 sx caustic. **DMC** \$779, **CMC** \$10,800. **TIME:** .75 hr drlg, 1 hr surv, 22.25 hrs drlg. **CWC** \$468,100.

MEASURED DEPTH feet	DRIFT ANGLE deg	DRIFT DIRECTION deg	COURSE LENGTH feet	TRUE VERTICAL DEPTH feet	VERTICAL SECTION feet	RECTANGULAR COORDINATES feet	DOGLEG SEVERITY dg/100'
9,736	1.25	N 60.00 E	473	9,735.1	27.5	28.8 N 43.2 E	0.16

Final closure direction N 56.31, final closure distance 51.912'.

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GAINER UNIT #1

Lea County, New Mexico
Tatum Basin Prospect
1,294' FNL 39' FWL
Section 22, T10S-R36E

X=829769.3 Y=887935.9

PPTD: 12,500'

Patterson Drilling Co., Rig #48

12/11/97: **TD 10,075'. DAY 27**, lm/sh, Mde 70' in last 24 hrs, drlg. **DEV SURV**: See chart below. **BGG**: 8 units, CG: 10 units, TG: 27 units. **BHA**: Bit, BS, monel, 26 DC = 807.99'. **PUMP #1**, DB700, 5 $\frac{1}{2}$ " x 16", SPM 60, GPM 320, PP 1500 psi, WOB 50,000# @ 60 RPM. **PUMP #2**, DB-550, 5 $\frac{1}{2}$ " x 16". **BIT #6**, 7 $\frac{7}{8}$ ", HTC, EP44, S/N N94YB, Jets 12,12,12, In @ 8830', Mde 1201' in 113.5 hrs, Out @ 10,031', Grade 8-4-I. **BIT #7**, 7 $\frac{7}{8}$ ", HTC, J44C, S/N K51YL, Jets 12,12,12, In @ 10,031', Mde 44' in 5.5 hrs. **MUD**: Salt gel/oil/starch, MW 9.9#, Vis 38, WI 16.2, Slids 4.6%, Oil 3%, pH 11, CI 97,000, Gels 4/9, PV 7, YP 8. Used 2 cans aldacide, 62 sx gel, 4 gals defoamer, 7 sx starch. **DMC** \$604, **CMC** \$11,405. **TIME**: 2.5 hrs drlg, .25 hr RS, .5 hr drlg, .75 hr surv, 5 hrs TOOH, SLM-no corr, 1.25 hrs TIH, 1.5 hrs cut drlg line, .75 hr jet pit, 1.25 hrs rig rep, 3.75 hrs TIH, 1 hr wash to btm, 5.5 hrs drlg. (12/10/97 DWC \$8,800, CWC \$476,900), DWC \$4,400, CWC \$481,300.

MEASURED DEPTH feet	DRIFT ANGLE deg	DRIFT DIRECTION deg	COURSE LENGTH feet	TRUE	VERTICAL SECTION feet	RECTANGULAR COORDINATES feet	DOGLEG SEVERITY dg/100'
				DEPTH feet			
9,988	0.75	N 40.00 E	252	9,987.1	30.0	31.4 N 46.6 E	0.24

Final closure direction N 56.02, final closure distance 56.239'.

12/12/97: **TD 10,238'. DAY 28**, lm/sh, Mde 163' in last 24 hrs, drlg. **DEV SURV**: None. **BGG**: 12 units, CG: 15 units. **BHA**: Bit, BS, monel, 26 DC = 807.99'. **PUMP #1**, DB700, 5 $\frac{1}{2}$ " x 16", SPM 60, GPM 320, PP 1600 psi, WOB 50,000# @ 60 RPM. **PUMP #2**, DB-550, 5 $\frac{1}{2}$ " x 16". **BIT #6**, 7 $\frac{7}{8}$ ", HTC, EP44, S/N N94YB, Jets 12,12,12, In @ 8830', Mde 1201' in 113.5 hrs, Out @ 10,031', Grade 8-4-I. **BIT #7**, 7 $\frac{7}{8}$ ", HTC, J44C, S/N K51YL, Jets 12,12,12, In @ 10,031', Mde 207' in 23.75 hrs. **MUD**: Salt gel/oil/starch, MW 9.8#, Vis 43, WI 16, Slids 5.9%, Oil 3%, pH 11, CI 93,000, Gels 3/8, PV 9, YP 8. Used 3 cans aldacide, 35 sx gel, 2 gals defoamer, 25 sx starch, 3 sx caustic. **DMC** \$354, **CMC** \$11,759. **TIME**: 1 hr drlg, .5 hr RS, jet suction pit, 10.75 hrs drlg, .25 hr pmp softline, 2.25 hrs TOOH, 2.75 hrs TIH, 6.5 hrs drlg.

12/13/97: **TD 10,407'. DAY 29**, lm/sh, Mde 169' in last 24 hrs, drlg. **DEV SURV**: None. **BGG**: 8 units, CG: 10 units. **BHA**: Bit, BS, monel, 26 DC = 807.99'. **PUMP #1**, DB700, 5 $\frac{1}{2}$ " x 16". **PUMP #2**, DB-550, 5 $\frac{1}{2}$ " x 16". **BIT #7**, 7 $\frac{7}{8}$ ", HTC, J44C, S/N K51YL, Jets 12,12,12, In @ 10,031', Mde 376' in 41 hrs. **MUD**: Salt gel/starch, MW 9.8#, Vis 42, WI 10, Slids 4.6%, pH 11, CI 100,000, Gels 4/9, PV 8, YP 8. Used 2 cans aldacide, 45 sx salt gel, 2 gals defoamer, 10 sx starch, 6 sx caustic. **DMC** \$805, **CMC** \$12,564. **TIME**: .75 hr drlg, .75 hr pmp soft line, 5.5 hrs trip, .5 hr wash to btm, 16.5 hrs drlg. DWC \$7,200, CWC \$495,050.

12/14/97: **TD 10,596'. DAY 30**, lm, Mde 189' in last 24 hrs, drlg. **DEV SURV**: See chart below. **BGG**: 8 units, CG: 10 units, top of strawn 10,501'. **BHA**: Bit, BS, monel, 26 DC = 807.99'. **PUMP #1**, DB700, 5 $\frac{1}{2}$ " x 16", SPM 60, GPM 320, PP 1600 psi, WOB 50,000# @ 60 RPM. **PUMP #2**, DB-550, 5 $\frac{1}{2}$ " x 16". **BIT #7**, 7 $\frac{7}{8}$ ", HTC, J44C, S/N K51YL, Jets 12,12,12, In @ 10,031', Mde 565' in 63.5 hrs. **MUD**: Salt gel/oil/starch, MW 9.8#, Vis 44, WI 16.8, Slids 4.4%, pH 11, CI 106,000, Gels 11/25, PV 10, YP 10. Used 3 cans aldacide, 15 sx gel, 5 gals defoamer, 18 sx starch, 4 sx caustic. **DMC** \$550, **CMC** \$13,124. **TIME**: 2.75 hrs drlg, .25 hr RS, 8.5 hrs drlg, 1.25 hrs surv, 11.25 hrs drlg. DWC \$7,400, CWC \$502,450.

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Section 22, T10S-R36E

X=829769.3 Y=887935.9

PPTD: 12,500'

Patterson Drilling Co., Rig #48

12/14/97: Survey follows.
(cont'd.)

MEASURED DEPTH feet	DRIFT ANGLE deg	DRIFT DIRECTION deg	COURSE LENGTH feet	TRUE VERTICAL DEPTH feet	VERTICAL SECTION feet	RECTANGULAR COORDINATES feet	DOGLEG SEVERITY dg/100'
10,457	0.75	N 45.00 E	469	10,456	34.4	36.0 N 50.8 E	0.01

Final closure direction N 54.70 E, final closure distance 62.219'.

12/15/97: **TD 10,826'. DAY 31**, lm/sh, Mde 230' in last 24 hrs, drlg. **DEV SURV**: None. **BHA**: Bit, BS, monel, 26 DC = 807.99'. **PUMP #1**, DB700, 5 $\frac{1}{2}$ " x 16", SPM 60, GPM 320, PP 1650 psi, WOB 50,000# @ 60 RPM. **PUMP #2**, DB-550, 5 $\frac{1}{2}$ " x 16". **BIT #7**, 7 $\frac{7}{8}$ ", HTC, J44C, S/N K51YL, Jets 12,12,12, In @ 10,031', Mde 795' in 87.25 hrs. **MUD**: Salt gel /starch, MW 9.8#, Vis 43, WI 16.8, Slds 5%, pH 11, CI 96,000, Gels 11/19, PV 11, YP 8. Used 15 cans aldacide, 8 gals defoamer, 6 sx caustic. DMC \$1045, CMC \$14,219. **TIME**: 5 hrs drlg, .25 hr RS, 18.75 hrs drlg. DWC \$9,100, CWC \$511,550.

12/16/97: **TD 10,962'. DAY 32**, lm/sh/ch, Mde 136' in last 24 hrs, TIH. **DEV SURV**: See chart below. **BGG**: 10 units, CG: 15 units. **BHA**: Bit, BS, monel, 26 DC = 807.99'. **PUMP #1**, DB700, 5 $\frac{1}{2}$ " x 16", SPM 60, GPM 320, PP 1650 psi, WOB 50,000# @ 60 RPM. **PUMP #2**, DB-550, 5 $\frac{1}{2}$ " x 16". **BIT #7**, 7 $\frac{7}{8}$ ", HTC, J44C, S/N K51YL, Jets 12,12,12, In @ 10,031', Mde 931' in 102.5 hrs, Out @ 10,962', Grade 7-4-l. **BIT #8**, 7 $\frac{7}{8}$ ", STC, F47H, S/N LN8155, Jets 12,12,12, In @ 10,962'. **MUD**: Salt gel/starch, MW 9.7#, Vis 43, WI 13.2, Slds 3.8%, Oil 2%, pH 11, CI 92,000, Gels 8/15, PV 10, YP 9. Used 2 cans aldacide, 3 sx caustic, 52 sx gel, 45 sx starch. DMC \$605, CMC \$14,515. **TIME**: 1.25 hrs drlg, .25 hr RS, 14 hrs drlg, 1.25 hrs surv, 4.5 hrs TOOH, SLM, no corr, 2.75 hrs TIH. DWC \$6,100, CWC \$517,650.

MEASURED DEPTH feet	DRIFT ANGLE deg	DRIFT DIRECTION deg	COURSE LENGTH feet	TRUE VERTICAL DEPTH feet	VERTICAL SECTION feet	RECTANGULAR COORDINATES feet	DOGLEG SEVERITY dg/100'
10,925	0.75	N 62.00 E	468	10,924.0	37.9	39.6 N 55.6 E	0.05

Final closure direction N 54.59 E, final closure distance 68.276'.

12/17/97: **TD 11,136'. DAY 33**, lm/sh, Mde 174' in last 24 hrs, drlg. **DEV SURV**: None. **BGG**: 10 units, CG: 15 units. **BHA**: Bit, BS, monel, 26 DC = 807.99'. **PUMP #1**, DB700, 5 $\frac{1}{2}$ " x 16", SPM 60, GPM 320, PP 1600 psi, WOB 50,000# @ 60 RPM. **PUMP #2**, DB-550, 5 $\frac{1}{2}$ " x 16". **BIT #8**, 7 $\frac{7}{8}$ ", STC, F47H, S/N LN8155, Jets 12,12,12, In @ 10,962', Mde 174' in 21.75 hrs. **MUD**: Salt gel/starch, MW 9.8#, Vis 42, WI 12.2, Slds 5.4%, Oil 2%, pH 11, CI 92,000, Gels 4/9, PV 10, YP 10. Used 3 cans aldacide, 6 sx caustic, 40 sx gel, 23 sx starch, 2 gals defoamer. DMC \$1176, CMC \$15,751. **TIME**: 1.25 hrs drlg, .75 hr wash to btm, .75 hr drlg, .25 hr RS, 21 hrs drlg. DWC \$10,600, CWC \$528,250.

12/18/97: **TD 11,301'. DAY 34**, lm/sh, Mde 165' in last 24 hrs, drlg. **DEV SURV**: None. **BGG**: 8 units, CG: 10 units. **BHA**: Bit, BS, monel, 26 DC = 807.99'. **PUMP #1**, DB700, 5 $\frac{1}{2}$ " x 16", SPM 60, GPM 320, PP 1650 psi, WOB 50,000# @ 60 RPM. **PUMP #2**, DB-550, 5 $\frac{1}{2}$ " x 16". **BIT #8**, 7 $\frac{7}{8}$ ", STC, F47H, S/N LN8155, Jets 12,12,12, In @ 10,962', Mde 339' in 45.5 hrs. **MUD**: Salt gel/starch, MW 9.7#, Vis 42, WI 12.2, Slds 5.4%, Oil 2%, pH 11, CI 92,000, Gels 4/9, PV 10, YP 10. Used 3 cans aldacide, 6 sx caustic, 10 sx gals defoamer. CMC \$15,751. **TIME**: 2.25 hrs drlg, .25 hr RS, 21.5 hrs drlg.

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GAINER UNIT #1

Lea County, New Mexico

Tatum Basin Prospect

1,294' FNL 39' FWL

Section 22, T10S-R36E

X=829769.3 Y=887935.9

PPTD: 12,500'

Patterson Drilling Co., Rig #48

12/19/97: **TD 11,513'. DAY 35**, lm/sh/sd, Mde 212' in last 24 hrs, drlg. **DEV SURV**: See chart. **BGG**: 10 units, CG: 12 units. **BHA**: Bit, BS, monel, 26 DC = 807.99'. **PUMP #1**, DB700, 5 $\frac{1}{2}$ " x 16", SPM 60, GPM 320, PP 1650 psi, WOB 50,000# @ 60 RPM. **PUMP #2**, DB-550, 5 $\frac{1}{2}$ " x 16". **BIT #8**, 7 $\frac{7}{8}$ ", STC, F47H, S/N LN8155, Jets 12,12,12, In @ 10,962', Mde 551' in 65.75 hrs. **MUD**: Salt gel/starch, MW 9.7#, Vis 45, WI 14.2, Slids 5.3%, Oil 2%, pH 11, CI 84,000, Gels 4/9, PV 11, YP 12. Used 3 cans aldacide, 9 sx caustic, 4 gals defoamer, 46 sx starch, 30 sx gel. DMC \$1,142, CMC \$16,893. **TIME**: .25 hr drlg, .25 hr RS, 5 hrs drlg (11,346'-11,270' drlg back), 2 hrs circ samples, 9.5 hrs drlg, 1.5 hrs surv, 5.5 hrs drlg. DWC \$536,950, CWC \$546,650.

MEASURED DEPTH feet	DRIFT ANGLE deg	DRIFT DIRECTION deg	COURSE LENGTH feet	TRUE VERTICAL DEPTH feet	VERTICAL SECTION feet	RECTANGULAR COORDINATES feet	DOGLEG SEVERITY dg/100'
11,419	0.75	N 40.00 E	494	11,418.0	41.7	43.6 N 60.6 E	0.06

Final closure direction N 54.29 E, final closure distance 74.612'.

12/20/97: **TD 11,707'. DAY 36**, lm/sh, Mde 194' in last 24 hrs, drlg. **DEV SURV**: None. **BGG**: 5 units, CG: 10 units. **BHA**: Bit, BS, monel, 26 DC = 807.99'. **PUMP #1**, DB700, 5 $\frac{1}{2}$ " x 16", SPM 60, GPM 320, PP 1650 psi, WOB 50,000# @ 60 RPM. **PUMP #2**, DB-550, 5 $\frac{1}{2}$ " x 16". **BIT #8**, 7 $\frac{7}{8}$ ", STC, F47H, S/N LN8155, Jets 12,12,12, In @ 10,962', Mde 745' in 88.5 hrs. **MUD**: Salt gel/starch, MW 9.9#, Vis 43, WI 12.4, Slids 5.5%, Oil 1.5%, pH 11, CI 90,000, Gels 4/11, PV 11, YP 10. Used 3 cans aldacide, 9 sx caustic, 7 gals defoamer, 38 sx starch, 45 sx gel. DMC \$1,423 CMC \$18,317. **TIME**: .75 hr drlg, .25 hr RS, 17 hrs drlg, 1 hr rep rot chain, 5 hrs drlg. DWC \$10,100, CWC \$556,750.

12/21/97: **TD 11,754'. DAY 37**, lm/ch, Mde 47' in last 24 hrs, TIH. **DEV SURV**: See chart below 12/22/97. **BHA**: Bit, JB, BS, monel, 26 DC. **PUMP #1**, DB700, 5 $\frac{1}{2}$ " x 16", SPM 60, GPM 320, PP 1650 psi, WOB 50,000# @ 60 RPM. **PUMP #2**, DB-550, 5 $\frac{1}{2}$ " x 16". **BIT #8**, 7 $\frac{7}{8}$ ", STC, F47H, S/N LN8155, Jets 12,12,12, In @ 10,962', Mde 792' in 96.25 hrs, Out @ 11,754', Grade 8-8 $\frac{3}{4}$ ". **BIT #9**, 7 $\frac{7}{8}$ ", STC, F47H, S/N LN9593, Jets 12,12,12, In @ 11,754'. **MUD**: Salt gel/starch, MW 9.9#, Vis 43, WI 12.4, Slids 5.5%, Oil 1.5%, pH 11, CI 90,000, Gels 4/11, PV 11, YP 10. Used 1 can aldacide, 6 sx starch. CMC \$18,317. **TIME**: 3.75 hrs drlg, .25 hr RS, 4 hrs drlg, 1.5 hrs surv, 6.5 hr TOOH, SLM, no corr, 2.5 hrs TIH, .5 hr mud logger's trailer on fire, 3.25 hrs TIH, 1.25 hrs mud logger's trailer appeared to reignite itself & continued to burn, .5 hr TIH. DWC \$9,300, CWC \$566,050.

12/22/97: **TD 11,894'. DAY 38**, lm/sh, Mde 140' in last 24 hrs, drlg. **DEV SURV**: See chart below. **BHA**: Bit, JB, BS, monel, 26 DC. **PUMP #1**, DB700, 5 $\frac{1}{2}$ " x 16", SPM 60, GPM 320, PP 1650 psi, WOB 45,000# @ 60 RPM. **PUMP #2**, DB-550, 5 $\frac{1}{2}$ " x 16". **BIT #8**, 7 $\frac{7}{8}$ ", STC, F47H, S/N LN8155, Jets 12,12,12, In @ 10,962', Mde 792' in 96.25 hrs, Out @ 11,754', Grade 8-8 $\frac{3}{4}$ ". **BIT #9**, 7 $\frac{7}{8}$ ", STC, F47H, S/N LN9593, Jets 12,12,12, In @ 11,754', Mde 140' in 18.75 hrs. **MUD**: Salt gel/starch, MW 9.9#, Vis 40, WI 10.4, Slids 4.6%, Oil 1%, pH 11, CI 95,000, Gels 3/9, PV 9, YP 8. Used 3 cans aldacide, 6 sx caustic, 4 gals defoamer. DMC \$1059, CMC \$19,376. **TIME**: 3.75 hrs ream 90' to btm, 18 hrs drlg, 1.5 hrs surv, .75 hr drlg. DMC \$9,750, CWC \$575,800.

Surveys follow on next page.

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Lea County, New Mexico
Tatum Basin Prospect
1,294' FNL 39' FWL
Section 22, T10S-R36E

X=829769.3 Y=887935.9

PPTD: 12,500'

Patterson Drilling Co., Rig #48

12/22/97: Surveys follow.
(cont'd.)

MEASURED DEPTH feet	DRIFT ANGLE deg	DRIFT DIRECTION deg	COURSE LENGTH feet	TRUE VERTICAL DEPTH feet	VERTICAL SECTION feet	RECTANGULAR COORDINATES feet	DOGLEG SEVERITY dg/100'
11,726	1.25	N 35.00 E	307	11,724.9	45.9	47.8 N 63.8 E	0.17
11,847	0.75	N 8.00 W	121	11,845.9	47.7	49.7 N 64.4 E	0.72

Final closure direction N 52.36 E, final closure distance 81.380'.

12/23/97: **TD 12,013'. DAY 39**, lm/sh, Mde 119' in last 24 hrs, drlg. **DEV SURV**: None. **BGG**: 55 units, CG: 63 units. **BHA**: Bit, JB, BS, monel, 26 DC. **PUMP #1**, DB700, 5 $\frac{1}{2}$ " x 16", SPM 60, GPM 320, PP 1650 psi, WOB 50,000# @ 60 RPM. **PUMP #2**, DB-550, 5 $\frac{1}{2}$ " x 16. **BIT #9**, 7 $\frac{7}{8}$ ", STC, F47H, S/N LN9593, Jets 12,12,12, In @ 11,754', Mde 259' in 40 hrs. **MUD**: Salt gel/starch, MW 9.8#, Vis 39, WI 8.8, Slids 6%, Oil 1%, pH 11, CI 89,000, Gels 3/7, PV 8, YP 11. Used 2 cans aldacide, 2 sx caustic. DMC \$644, CMC \$20,020. **TIME**: 3 hrs drlg, .25 hr RS, 18.25 hrs drlg, 2.5 hrs TOO H for bit. CWC \$575,800.

12/24/97: **TD 12,033'. DAY 40**, lm/sh, Mde 20' in last 24 hrs, winterize rig. **DEV SURV**: See chart below. **BGG**: Not listed. **BHA**: Bit, JB, BS, monel, 26 DC. **PUMP #1**, DB700, 5 $\frac{1}{2}$ " x 16", SPM 60, GPM 320, PP 1650 psi, WOB 45,000# @ 60 RPM. **PUMP #2**, DB-550, 5 $\frac{1}{2}$ " x 16. **BIT #9**, 7 $\frac{7}{8}$ ", STC, F47H, S/N LN9593, Jets 12,12,12, In @ 11,754', Mde 259' in 40 hrs, Out @ 12,013', Grade 4-3-1/16. **BIT #10**, 7 $\frac{7}{8}$ ", HTC, J44C, S/N N51YJ, Jets 12,12,12, In @ 12,013', Mde 20' in 4.25 hrs. **MUD**: Salt gel/starch, MW 9.8#, Vis 39, WI 8.8, Slids 6%, Oil 1%, pH 11, CI 89,000, Gels 3/7, PV 8, YP 11. Used 2 cans aldacide, 2 sx caustic, 10 sx starch. CMC \$20,020. **TIME**: 5.5 hrs trip for bit, 1 hr cut drlg line, 2.5 hrs TIH, .75 hr wash to btm, 4.25 hrs drlg, 2.5 hrs circ spls, 1 hr surv, 1 hr spot pill on btm, 2.75 hrs TOO H 86 stds, 2.75 hrs winterize rig. CWC \$575,800.

MEASURED DEPTH feet	DRIFT ANGLE deg	DRIFT DIRECTION deg	COURSE LENGTH feet	TRUE VERTICAL DEPTH feet	VERTICAL SECTION feet	RECTANGULAR COORDINATES feet	DOGLEG SEVERITY dg/100'
12,033	0.75	N 45.00 W	186	12,031.9	49.8	51.8 N 63.4 E	0.26

Final closure direction N 50.77 E, final closure distance 81.858'.

12/25/97: **DAY 41 & DAY 42.**
thru Down for Christmas. (DWC \$14,350, CWC \$590,150 12/23/97, DWC \$8,200, CWC \$598,350 12/24/97,
12/26/97: DWC \$400, CWC \$598,750 12/25/97) DWC \$400, CWC \$599,150.

12/27/97: **TD 12,108'. DAY 43**, lm/sh, Mde 75' in last 24 hrs, drlg. **DEV SURV**: None. **BGG**: 3 units, TG: 64 units. **BHA**: Bit, JB, BS, monel, 26 DC. **PUMP #1**, DB700, 5 $\frac{1}{2}$ " x 16", SPM 60, GPM 320, PP 1650 psi, WOB 50,000# @ 60 RPM. **PUMP #2**, DB-550, 5 $\frac{1}{2}$ " x 16. **BIT #10**, 7 $\frac{7}{8}$ ", HTC, J44C, S/N N51YJ, Jets 12,12,12, In @ 12,033', Mde 75' in 16.75 hrs. **MUD**: Salt gel/starch, MW 9.8#, Vis 39, WI 5.6, Slids 6%, Oil 1%, pH 11, CI 90,000, Gels 3/7, PV 8, YP 11. Used 1 cans aldacide, 3 sx caustic. CMC \$20,020. **TIME**: 1 hr start rig, 2.5 hrs TIH, .5 hr wash to btm, 2 hrs drlg, .25 hr RS, 4.75 hrs drlg, .5 hr pmp soft line, 3.5 hrs TOO H, 3.25 hrs TIH, 5.75 hrs drlg. DWC \$8,200, CWC \$607,350.

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Lea County, New Mexico

Tatum Basin Prospect

1,294' FNL 39' FWL

Section 22, T10S-R36E

X=829769.3 Y=887935.9

PPTD: 12,500'

Patterson Drilling Co., Rig #48

12/28/97: **TD 12,196'. DAY 44**, ch/lm/sh, Mde 88' in last 24 hrs, drlg. **DEV SURV**: None. **BGG**: 6 units, CG: 17 units, TG: 64 units. **BHA**: Bit, JB, BS, monel, 26 DC. **PUMP #1**, DB700, 5 $\frac{1}{2}$ " x 16", SPM 30, GPM 320, PP 1650 psi, WOB 50,000# @ 60 RPM. **PUMP #2**, DB-550, 5 $\frac{1}{2}$ " x 16". **BIT #10**, 7 $\frac{7}{8}$ ", HTC, J44C, S/N N51YJ, Jets 12,12,12, In @ 12,013', Mde 183' in 34.75 hrs. **MUD**: Salt gel/starch, MW 9.7+ #, Vis 40, WI 4, Slids 6%, Oil 1%, pH 11, CI 90,000, Gels 9/11, PV 8, YP 10. Used 6 sx caustic. DMC \$46, CMC \$20,066. **TIME**: 4.25 hrs drlg, .25 hr RS, 13.75 hrs drlg, .5 hr pmp soft line, 5.25 hrs trip. DWC \$8,250, CWC \$615,600.

12/29/97: **TD 12,221'. DAY 45**, dolo, Mde 25' in last 24 hrs, PU DST #1. **DEV SURV**: See chart below. **BGG**: Not listed. **BHA**: Bit, JB, BS, monel, 26 DC. **PUMP #1**, DB700, 5 $\frac{1}{2}$ " x 16", SPM 60, GPM 320, PP 1650 psi, WOB 50,000# @ 60 RPM. **PUMP #2**, DB-550, 5 $\frac{1}{2}$ " x 16". **BIT #10**, 7 $\frac{7}{8}$ ", HTC, J44C, S/N N51YJ, Jets 12,12,12, In @ 12,013', Mde 208' in 37.25 hrs, Out @ 12,221', Grade 2-2-1/16. **MUD**: Salt gel/starch, MW 9.7 #, Vis 40, WI 3.6, Slids 6%, Oil 1%, pH 11, CI 89,000, Gels 6/11, PV 8, YP 9. Used 20 sx gel, 5 sx starch, 1 sx caustic. DMC \$979, CMC \$21,000. **TIME**: 3.75 hrs TIH, .75 hr work on air comp, .5 hr replace geograph wire, 1.5 hrs drlg, .25 hr circ spls @ 12,209', .5 hr drlg, 3 hrs circ spls @ 12,214', .5 hr drlg, 5 hrs circ @ 12,221', 1.25 hrs surv, 7 hrs TOOH, SLM. DWC \$9,700, CWC \$625,300.

MEASURED DEPTH feet	DRIFT ANGLE deg	DRIFT DIRECTION deg	COURSE LENGTH feet	TRUE		RECTANGULAR		DOGLEG SEVERITY dg/100'
				VERTICAL DEPTH feet	VERTICAL SECTION feet	COORDINATES		
						feet		
12,188	0.50	S 64.00 W	155	12,186.9	50.3	52.2 N	62.1 E	0.49

Final closure direction N 49.95 E, final closure distance 81.106'.

12/30/97: **TD 12,221'. DAY 46**, dolo, Mde 0' in last 24 hrs, DST #1. **DEV SURV**: None. **BGG**: Not listed. **BHA**: Test tools. **PUMP #1**, DB700, 5 $\frac{1}{2}$ " x 16", SPM 60, GPM 320, PP 1650 psi. **PUMP #2**, DB-550, 5 $\frac{1}{2}$ " x 16". **BIT #10**, None in hole. **MUD**: Salt gel/starch, MW 9.7 #, Vis 40, WI 3.6, Slids 6%, pH 11, CI 89,000, Gels 6/11, PV 8, YP 9. No mud additives used. CMC \$21,000. **TIME**: 2 hrs unload & PU tools, .75 hr TIH, .5 hr wtr blanket, .25 hr TIH, .5 hr wtr blanket, 3.25 hrs TIH, 16.75 hrs run DST #1. CWC \$625,300.

DST #1, DEVONIAN, 12,106'-12,221' (115').

1500' wtr cushion, Open tool initially for 15 mins w/1" blow as follows.

TIME	CHOKE	PRESSURE
1	$\frac{1}{8}$ " needle valve	$\frac{3}{8}$ "
2		1 $\frac{1}{2}$ "
3		1 $\frac{1}{2}$ "
4		2 "
5		2 $\frac{3}{4}$ "
10		5 " = 2 $\frac{1}{2}$ oz
15		7 " = 4 oz

Close tool for 45 mins.

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Tatum Basin Prospect
1,294' FNL 39' FWL
Section 22, T10S-R36E

X=829769.3 Y=887935.9

PPTD: 12,500'

Patterson Drilling Co., Rig #48

12/30/97: DST #1 results continue.
(cont'd.) Reopen tool w/fair blow.

<u>TIME</u>	<u>CHOKE</u>	<u>PRESSURE</u>	<u>REMARKS</u>
1	$\frac{1}{8}$ "	1 "	
5		2 $\frac{1}{2}$ oz	
10		4 $\frac{1}{2}$ oz	
15		6 oz	
30		13 $\frac{1}{2}$ oz	
45		2 $\frac{1}{2}$ psi	
60		4.4 psi	
75		9.4 psi	
90		13.0 psi	
120		16.4 psi	
150		17.7 psi	
180		18.0 psi	GTS 185 mins w/18 psi
195		17.8 psi	
240		19.6 psi	

Close tool for 12 hrs.
DWC \$8700, CWC \$634,000.

12/31/97: **TD 12,221'. DAY 47**, dolo, Mde 0' in last 24 hrs, working stuck pipe @ 11,847'. **DEV SURV:** None. **BGG:** Not listed. **BHA:** Bit, BS, 26 DC, 360 DP. **PUMP #1**, DB700, 5 $\frac{1}{2}$ " x 16", SPM 60, GPM 320, PP 1650 psi. **PUMP #2**, DB-550, 5 $\frac{1}{2}$ " x 16. **BIT #10**, 7 $\frac{7}{8}$ ", HTC, J44C, S/N N51YJ, Jets 12,12,12, In @ 12,221'. **MUD:** Salt gel/starch, MW 9.7#, Vis 40, WI 3.6, Slds 6%, pH 11, CI 89,000, Gels 6/11, PV 8, YP 9. No mud additives used. CMC \$21,000. **TIME:** .75 hr run DST #1, 3.5 hrs TOOH, 1.75 hrs rev out, 2 hrs TOOH, 2 hrs break tools, 3.5 hrs TIH, .5 hr wash to btm, 5 hrs circ for logs, spot 100 bbl pill, 2 hrs TOOH to 11,817', 1 hr wait & TIH, 2 hrs work pipe @ 11,847'. DWC \$11,000, CWC \$645,000.

DST #1 preliminary results continues.

PIPE RECOVERY: 1547' (22 bbls) gas cut oil, 51° @ 60° F, 784' (11.2 bbls) gas cut wtr cushion, 6000 ppm, 1264' oil & gas cut mud (50% oil).
SAMPLE CHAMBER: 525 psi, 1.95 cu ft gas, 900 cc oil, 54.2° @ 60° F, no wtr, 200 cc mud, 54,000 ppm, GOR 346, GLR 283.

IHP	6182 psi
IFP (15 mins)	649 - 749 psi
ISIP (45 mins)	4465 psi
FFP (240 mins)	745 - 1414 psi
FSIP (719 mins)	4481 psi
FHP	6181 psi
BHT	186° F

01/01/98: **TD 12,221'. DAY 48**, logging. **PUMP #1**, DB700, 5 $\frac{1}{2}$ " x 16". **PUMP #2**, DB-550, 5 $\frac{1}{2}$ " x 16. **BIT #10**, none in hole. **MUD:** Salt gel/starch, MW 9.8#, Vis 56, WI 5.4, Slds 6.6%, Oil 1%, pH 11, CI 62,000, Gels 7/13,

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PPTD: 12,500'

Patterson Drilling Co., Rig #48

01/01/98: PV 10, YP 17. Used 203 sx salt gel, 58 sx starch, 20 gals defoamer. DMC \$1887, CMC \$22,887. **TIME:** (cont'd.) .5 hr work pipe @ 11,847', 1.25 hrs wash & ream bridge, .25 hr TIH, .75 hr jet suction pit, .5 hr wash 90'-8' fill, 7.75 hrs circ & cond, 1 hr 20 std sh trip, 1 hr WO sh trip, .5 hr TIH, 2 hrs circ, .5 hr spot 100 vis pill, 1 hr chain out 15 stds, .5 hr TIH, 4 hrs chain out, 2.5 hrs logging. (DWC \$8,700, CWC \$634,000 12/30/97, DWC \$11,000, CWC \$645,000) DWC \$9500, CWC \$654,500.

01/02/98: **TD 12,221'. DAY 49, LDDP. PUMP #1, DB700, 5 $\frac{1}{2}$ " x 16", SPM 60, GPM 320, PP 1650 psi. PUMP #2, DB-550, 5 $\frac{1}{2}$ " x 16. BIT #10, 7 $\frac{7}{8}$ ", HTC, J44C, S/N N51YJ, Jets open. MUD: Salt gel/starch, MW 9.8#, Vis 56, WI 5.4, Slds 6.6%, Oil 1%, pH 11, CI 62,000, Gels 7/13, PV 10, YP 17. No mud additives used. CMC \$22,887. **TIME:** 4 hrs logging, **loggers TD 12,231'**, 1.25 hrs TIH, 1 hr cut 178' drill line, 2.75 hrs TIH, 3.25 hrs circ, .75 hr spot 20/40 sd on btm, 4 hrs TOOH 15 stds (10,762'), WO sd, .5 hr TIH, tag sd @ 12,209', dress to 12,213', 4.75 hrs circ sd out, 1.75 hrs RU, LDDP. DWC \$22,200, CWC \$676,700. RU Schlumberger to run OH logs, found intermed csg @ 4263', TD @ 12,230'.**

<u>RUN</u>	<u>TOOL</u>	<u>TD</u>	<u>INTERVAL LOGGED</u>
1	Three Detector Density (PEX)	12,230'	12,228' - 9,600'
1	Compensated Neutron	12,230'	12,215' - 200'

01/03/98: **TD 12,221'. DAY 50, ND BOP. PUMP #1, DB700, 5 $\frac{1}{2}$ " x 16". PUMP #2, DB-550, 5 $\frac{1}{2}$ " x 16. **TIME:** 6.25 LDDP & DC, .5 hr RU csg crew, 7.5 hrs run 5 $\frac{1}{2}$ " csg, 5.25 hrs circ, run WL, .5 hr RD WL trk, 1 hr wash to 12,213', set pkr, 2 hrs RU & cmt, 1 hr WOC. DWC \$146,600, CWC \$823,300.**

	<u>MAKE UP LENGTH</u>	<u>DEPTH FROM DATUM TO TOP OF ITEM</u>
61 jts - 5 $\frac{1}{2}$ " 20# L80 8rd LTC Maverick ERW new csg	2,499.53'	- 11.40'
216 jts - 5 $\frac{1}{2}$ " 17# L80 8rd LTC Maverick ERW new csg	8,964.93'	2,488.13'
18 jts - 5 $\frac{1}{2}$ " 20# L80 8rd LTC Maverick ERW new csg	673.41'	11,453.06'
1 - Halliburton insert baffle	0.00	12,126.47'
2 jts - 5 $\frac{1}{2}$ " 20# L80 8rd LTC new csg shoe jts	84.21'	12,126.47'
1 - 5 $\frac{1}{2}$ " x 7" Halliburton F.P.S. pkr shoe	2.80'	12,210.68'
Total Length of String	12,224.88'	
Less Cut-Off Piece	29.90'	
Plus Datum to T/Cut-Off Csg	18.50'	
Casing Set @	12,213.48'	

B.J. Services cmtd csg w/**Spacers Ahead**-150 bbl mud w/150 SCF/bbl N₂ w/500 gals Mud Clean, 5 BW, 500 gals Sure Bond, 5 BW, **LEAD-700** sx Class "H" w/.6% FL52, 3.5#/sx salt, .4% CD32 mixed @ 15.6 ppg, yield 1.20 cu ft/sx, used 2 Weatherford Double Rev. Bow cent/jt on 1st 10 jts, good circ throughout job, did not circ cmt to surf, PD @ 6:00 AM, 1/3/98.

01/04/98: **TD 12,221'. DAY 51, rig released. **TIME:** 8.5 hrs ND, set slips, clean pits.**

RIG RELEASED 3:30 PM CST, 1/3/98.

01/05/98: WO completion.

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01/06/98:

thru **TD 12,221'**. WO completion.

01/09/98:

01/10/98: Bruton Services cleaned & leveled loc, bladed & patched road to hyw, WO completion.

01/13/98: T & C Anchor Serv set dead man @ tested, WO completion rig.

01/14/98:

thru WO completion unit.

01/19/98:

01/20/98: MIRU Cobra WS #171, NU 7-1/16" x 3000# BOP & function test, unload & strap 388 jts 2 7/8" 6.5# L80 8rd EUE tbg, PU 4 3/4" Varel bit, BS, 6-3 1/2" DC, XO, BHA #1 = 180.39', RU Lea Fishing Tool rev unit, pmp & pit, PU 200 jts 2 7/8" tbg to 6530', secure well, SDFN.

01/21/98: Cont PU 2 7/8" tbg, tag up @ 12,124', RU Pwr swvl, drill out baffle @ 12,126', drill out 80' cmt to 12,206', circ clean, test 5 1/2" csg to 2000 psi for 5 mins, OK, disp hole w/260 bbls 3% HCl wtr, LD swvl & 2 jts tbg, secure well, SDFN. DCC \$4350, CCC \$57,850, CWC \$890,850.

01/22/98: PU swvl & 2 jts, drill out 4' cmt & pkr shoe @ 12,213', clean out sd in open hole to 12,230' (tbg strap=12,232', circ hole clean, LD swvl, TOOH w/380 jts tbg, LD DC & bit, RU Schlumberger, run CBL, loggers TD 12,230', TOC @ 9830', RD Schlumberger, TIH w/20 stds kill string to 1265', secure well, SDFN. DCC \$8350, CCC \$66,200, CWC \$899,200.

RU Schlumberger to run CBL, found PBTD @ 12,228', est TOC @ 9815', CBL run w/no press, possible microannulus effects.

INTERVAL	MV	COMMENTS
12,222'-11,760'	Mostly 10-30	Fair to poor
11,760'-11,470'	Mostly above 20	Poor
11,470'-11,320'	Mostly 10-20	Fair to poor
11,320'-10,770'	Mostly 10 or below	Fair
10,770'-9,815'	Mostly 10-30	Fair to poor

01/23/98: SITP 50 psi, TOOH w/20 std kill string, RU Tbg Testers, PU pkr, TIH testing tbg to 5000 psi, ND BOP, NU tbg flange, circ 200 bbl 3% KCl wtr w/pkr fl down annulus, set pkr @ 12,053' w/15K cmprsn, test pkr to 500 psi for 5 mins, OK, RU, swab well 2 hrs, IFL @ surf, FFL @ 5500', mde 5 runs, total load 73 BLW, recovd 42 BLW, 31 BLWTR, left well open to test tank on 16/64" ch, secure well, SDFN. DCC \$12,550, CCC \$78,750, CWC \$911,750.

Remarks: Fannie Lee Mitchell frd & set all surf prod equip from State 7 #1.

Ran tbg as follows.

	- KB Correction	16.00'
380 jts	- 2 7/8" 6.5# L80 8rd EUE tbg	12,035.74'
1	- 2 7/8" API SN	1.10'
1	- 2 7/8" x 5 1/2" Baker Mdl "R" pkr	7.15'
2 jts	- 2 7/8" 6.5# L80 tailpipe	63.62'
	End of Tubing	12,123.61'

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- 01/24/98: Swab well 10 hrs, IFL 200', FFL 10,500', mde 15 runs, recov 50.5 BO, 36.5 BLW, last 2 runs 90% oil cut, left well open to test tank on 14/64" ch, SDFN. DCC \$43,250, CCC \$122,000. CWC \$955,000.
- 01/25/98: Swab well 9 hrs, IFL 200', FFL 11,000', Mde 9 runs, recov 80 BO, 1 BLW, last 4 runs pulled f/SN, left well open to test tank on 14/64" ch, RD, release WS unit, B & P Roustabouts connecting tanks & heater, well flowed no fl overnight. DCC \$3400, CCC \$125,400, CWC \$958,400.
- 01/26/98: FTP 35 psi, 16/64" ch, recov 64 BO (FARO 65.4 BOPD), 0 BW in 23.5 hrs.
- 01/27/98: FTP 885 psi, 8/64" ch, recov 414.2 BO (FARO 199 BOPD), 8.3 BLW in 24 hrs.
RU Halliburton, CTU & RIH w/1.5 CT, load coil w/28 BO & circ well, spot 500 gal of 20% HCl acid thru CT on btm at 12,230', put 1 bbl acid out CT & close bksd in press BU to 490 psi, acidize open hole from 12,213' - 12,230' w/200 gal in 7 stages, pmp $\frac{1}{4}$ BPM, press on bksd, would incr to 580 - 600 psi, then drop to 560 psi in 7 - 10 min, pull CT to 8000', start jetting w/500 SCF/min nitrogen. RIH to TD @ 12,230', jet on btm for 20 min, POH w/CT, jet well in, 12 hrs tot fl recov plus load while jetting & acidizing = 161.20 BO & 8.3 BLW, flw tst well overnight on various ch sizes @ 18 BPH to 8 BPH, 735 psi to 885 psi, last 12 hrs prod = 253 BO. DCC \$23,700, CCC \$149,100, CWC \$982,100.
- 01/28/98: FTP 800 psi, 8/64" PC, recov 204 BO (FARO 223 BOPD), 0 BW, 0 MCF in 22 hrs.
Flow tst well, tie wellhead into perm flowline, $\frac{1}{4}$ " paraffin BU on flowline to tst tks, turn thru heater into tk battery, fill heater w/ $\pm$ 24 BO. Flow rate last 14 hrs = 9.4 BPH. DCC \$2,900, CCC \$152,000, CWC \$985,000.
- 01/29/98: FTP 875 psi, 8/64" PC, 225 BO, 0 BW in 24 hrs.
- 01/30/98: FTP 870 psi, 8/64" ch, 225 BO 0 BW in 24 hrs.
HU orifice tester, est 79 MCFD on $\frac{1}{2}$ " orifice.
- 01/31/98: FTP 865 psi, 8/64" ch, 113 MCF gas, 231 BO, 0 BW in 24 hrs.
- 02/01/98: FTP 860 psi, 8/64" ch, 113 MCF gas, 218 BO, 0 BW in 24.5 hrs.
- 02/02/98: FTP 855 psi, 8/64" ch, 107 MCF gas, 204 BO, 0 BW in 24 hrs.
- 02/03/98: FTP 855 psi, 8/64" ch, 107 MCF gas, 214 BO (FARO 218.6 BOPD), 0 BW in 23.5 hrs.
- 02/04/98: FTP 855 psi, 8/64" ch, 107 MCF gas, 218 BO (FARO 213.6 BOPD), 0 BW in 24.5 hrs.
- 02/05/98: FTP 860 psi, 8/64" ch, no gas measurement, 201 BO, 0 BW in 22.5 hrs.
RU Reeco Well Serv paraffin cutter, ran 6-prong wire scratcher to 1500', ran full gauge paraffin knife to 4000', no apparent paraffin BU in tbg, hvy paraffin BU in FL on downstream side of choke, incr paraffin compound injection @ WH.
- 02/06/98: FTP 860 psi, 8/64" ch, no gas measurement, 207 BO (FARO 202.8 BOPD), 0 BW in 24.5 hrs.
- 02/07/98: FTP 855 psi, 8/64" ch, no gas measurement, 217 BO (FARO 212.6 BOPD), 0 BW in 24.5 hrs.

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02/08/98: FTP 855 psi, 8/64" ch, no gas measurement, 215 BO (FARO 210.6 BOPD), 0 BW in 24.5 hrs.

02/09/98: FTP 850 psi, 8/64" ch, no gas measurement, 206 BO (FARO 219.7 BOPD), 0 BW in 22.5 hrs.

02/10/98: FTP 845 psi, 8/64" ch, no gas measurement, 220 BO, 0 BW in 24 hrs.

02/11/98: FTP 835 psi, 8/64" ch, no gas measurement, 217 BO, 0 BW in 24 hrs.
Fire tube on heater treater has pinhole leak.

02/12/98: FTP 830 psi, 8/64" ch, no gas measurement, 211 BO (FARO 215.5 BOPD), 0 BW in 23.5 hrs.

02/13/98: FTP 830 psi, 8/64" ch, no gas measurement, 209 BO (FARO 200.6 BOPD), 0 BW in 23.5 hrs. This AM, to chg out firetube, bypassed heater due to leak in firetube.

02/14/98: FTP 830 psi, 8/64" ch, no gas measurement, 210 BO (FARO 199.1 BOPD), 0 BW in 23.5 hrs. Chg out firetube.

02/15/98: FTP 820 psi, 8/64" ch, no gas measurement, 196 BO (FARO 199.1 BOPD), 0 BW in 23.5 hrs.

02/16/98: FTP 820 psi, 8/64" ch, no gas measurement, 195 BO (FARO 212.2 BOPD), 0 BW in 25 hrs. Trsfr approx 35 BO from wtr tk to stock tk.

02/17/98: FTP 815 psi, 8/64" ch, no gas measurement, 201 BO, 0 BW in 24 hrs.

02/18/98: FTP 815 psi, 8/64" ch, no gas measurement, 212 BO, 0 BW in 24 hrs.

02/19/98: FTP 815 psi, 8/64" ch, no gas measurement, 216 BO, 0 BW in 24 hrs.

02/20/98: FTP 815 psi, 8/64" ch, no gas measurement, 209 BO, 0 BW in 24 hrs.
Inst Axelson Mdl DG-3 hi/low shut off vlv.

02/21/98: FTP 815 psi, 8/64" ch, no gas measurement, 217 BO, 0 BW in 24 hrs.

02/22/98: FTP 815 psi, 8/64" ch, no gas measurement, 203 BO, 0 BW in 24 hrs.

02/23/98: FTP 820 psi, 8/64" ch, no gas measurement, 202 BO, 0 BW in 23.5 hrs.

02/24/98: FTP 820 psi, 8/64" ch, no gas measurement, 215 BO (FARO 219.6 BOPD), 0 BW in 23.5 hrs.

02/25/98: FTP 820 psi, 8/64" ch, no gas measurement, 218 BO (FARO 213.6 BOPD), 0 BW in 24.5 hrs.

02/26/98: FTP 815 psi, 8/64" ch, no gas measurement, 201 BO (FARO 209.7 BOPD), 0 BW in 23 hrs.

02/27/98: FTP 815 psi, 8/64" ch, no gas measurement, 217 BO (FARO 221.6 BOPD), 0 BW in 23.5 hrs.

02/28/97: FTP 810 psi, 8/64" ch, no gas measurement, 212 BO (FARO 207.7 BOPD), 0 BW in 24.5 hrs.

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03/01/98: FTP 805 psi, 8/64" ch, no gas measurement, 207 BO, 0 BW in 24 hrs.
03/02/98: FTP 800 psi, 8/64" ch, no gas measurement, 203 BO (FARO 207.3 BOPD), 0 BW in 24 hrs.
03/03/98: FTP 800 psi, 8/64" ch, no gas measurement, 203 BO, 0 BW in 24 hrs.
03/04/98: FTP 800 psi, 8/64" ch, no gas measurement, 201 BO, 0 BW in 24 hrs.
03/05/98: FTP 800 psi, 8/64" ch, no gas measurement, 215 BO, 0 BW in 24 hrs.
03/06/98: FTP 795 psi, 8/64" ch, no gas measurement, 202 BO, 0 BW in 24 hrs.
03/07/98: FTP 790 psi, 8/64" ch, no gas measurement, 198 BO (FARO 194.2 BOPD), 0 BW in 24.5 hrs.
03/08/98: FTP 790 psi, 8/64" ch, no gas measurement, 192 BO (FARO 200.4 BOPD), 0 BW in 23 hrs.
03/09/98: FTP 790 psi, 8/64" ch, no gas measurement, 195 BO (FARO 199.2 BOPD), 0 BW in 23.5 hrs.
03/10/98: FTP 780 psi, 8/64" ch, no gas measurement, 201 BO (FARO 197 BOPD), 0 BW in 24.5 hrs.

FINAL DAILY REPORT.

SEE MONTHLY PRODUCTION REPORT
