

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB No. 1004-0137
Expires: November 30, 2000

WELL COMPLETION OR RECOMPLETION REPORT AND LOG

5. Lease Serial No.
NMNM106718

1a. Type of Well ☒ Oil Well ☐ Gas Well ☐ Dry ☐ Other			6. If Indian, Allottee or Tribe Name		
b. Type of Completion ☒ New Well ☐ Work Over ☐ Deepen ☐ Plug Back ☐ Diff. Resvr. Other _____			7. Unit or CA Agreement Name and No.		
2. Name of Operator HARVEY E YATES COMPANY			8. Lease Name and Well No. CHOLLA 1 FED 4		
3. Address P. O. BOX 1933 ROSWELL, NM 88202			9. API Well No. 30-015-32834-00-X1		
4. Location of Well (Report location clearly and in accordance with Federal requirements)* At surface SENE 2260FNL 400FEL At top prod interval reported below SENE 2123FNL 1023FEL At total depth SENE 2123FNL 1023FEL			10. Field and Pool, or Exploratory CEDAR LAKE		
14. Date Spudded 08/06/2003			15. Date T.D. Reached 10/05/2003		
16. Date Completed ☐ D & A ☒ Ready to Prod. 11/28/2003			17. Elevations (DF, KB, RT, GL)* 3812 GL		
18. Total Depth: MD 12830 TVD 12757		19. Plug Back T.D.: MD 12767 TVD 12695		20. Depth Bridge Plug Set: MD 8750 TVD 8678	
21. Type Electric & Other Mechanical Logs Run (Submit copy of each) CBL CCL GR			22. Was well cored? ☒ No ☐ Yes (Submit analysis) Was DST run? ☒ No ☐ Yes (Submit analysis) Directional Survey? ☐ No ☒ Yes (Submit analysis)		

RECEIVED

DEC 16 2003

OCD-ARTESIA

23. Casing and Liner Record (Report all strings set in well)

Hole Size	Size/Grade	Wt. (#/ft.)	Top (MD)	Bottom (MD)	Stage Cementer Depth	No. of Sks. & Type of Cement	Slurry Vol. (BBL)	Cement Top*	Amount Pulled
17.875	13.375 H40	48.0	0	403		425	168	0	
12.250	8.625 J55	32.0	0	3100		1950	385	0	
7.875	5.500 N80,P11	17.0	0	12830	9346	1920	528	0	

24. Tubing Record

Size	Depth Set (MD)	Packer Depth (MD)	Size	Depth Set (MD)	Packer Depth (MD)	Size	Depth Set (MD)	Packer Depth (MD)
2.375	8428							

25. Producing Intervals

26. Perforation Record

Formation	Top	Bottom	Perforated Interval	Size	No. Holes	Perf. Status
A) 2ND BONE SPRINGS	8224	8690	8646 TO 8655		20	OPEN, PRODUCING
B)			8802 TO 8836	0.410	68	OPEN, PRODUCING
C)			9640 TO 9655			CIBP @ 9600 + 35' CMT
D)			11425 TO 11560	0.410	178	CIBP @ 11360 + 35' CMT

27. Acid, Fracture, Treatment, Cement Squeeze, Etc.

Depth Interval	Amount and Type of Material
8646 TO 8655	3K GALS 15% NEFE/ FRAC W/6000# LITE PROP 20/40, 47K GALS MEDALLION, 73K# 20/40, 10K GAL PAD
8802 TO 8836	4000 GALS 15% NEFE
9640 TO 9655	3000 GALS 15% NEFE
11425 TO 11560	8675 GALS 15% NEFE & OVERFLUSH W/3000 GALS 2% KCL

28. Production - Interval A

Date First Produced	Test Date	Hours Tested	Test Production	Oil BBL	Gas MCF	Water BBL	Oil Gravity Corr. API	Gas Gravity	Production Method
11/30/2003	11/30/2003	24		63.0	34.0	12.0			ELECTRIC PUMPING UNIT
Choke Size	Tbg. Press. Flwg. SI	Csg. Press.	24 Hr. Rate	Oil BBL	Gas MCF	Water BBL	Gas:Oil Ratio	Well Status	
		0.0		63	34	12		POW	

28a. Production - Interval B

Date First Produced	Test Date	Hours Tested	Test Production	Oil BBL	Gas MCF	Water BBL	Oil Gravity Corr. API	Gas Gravity	Production Method
Choke Size	Tbg. Press. Flwg. SI	Csg. Press.	24 Hr. Rate	Oil BBL	Gas MCF	Water BBL	Gas:Oil Ratio	Well Status	

(See Instructions and spaces for additional data on reverse side)

ELECTRONIC SUBMISSION #24431 VERIFIED BY THE BLM WELL INFORMATION SYSTEM

**** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ****

28b. Production - Interval C

Date First Produced	Test Date	Hours Tested	Test Production	Oil BBL	Gas MCF	Water BBL	Oil Gravity Corr. API	Gas Gravity	Production Method
			→						
Choke Size	Tbg. Press. Flwg. SI	Csg. Press.	24 Hr. Rate	Oil BBL	Gas MCF	Water BBL	Gas:Oil Ratio	Well Status	
			→						

28c. Production - Interval D

Date First Produced	Test Date	Hours Tested	Test Production	Oil BBL	Gas MCF	Water BBL	Oil Gravity Corr. API	Gas Gravity	Production Method
			→						
Choke Size	Tbg. Press. Flwg. SI	Csg. Press.	24 Hr. Rate	Oil BBL	Gas MCF	Water BBL	Gas:Oil Ratio	Well Status	
			→						

29. Disposition of Gas (Sold, used for fuel, vented, etc.)
SOLD

30. Summary of Porous Zones (Include Aquifers):

Show all important zones of porosity and contents thereof: Cored intervals and all drill-stem tests, including depth interval tested, cushion used, time tool open, flowing and shut-in pressures and recoveries.

31. Formation (Log) Markers

Formation	Top	Bottom	Descriptions, Contents, etc.	Name	Top
					Meas. Depth
				RUSTLER ANHYDRITE	949
				YATES	2450
				SEVEN RIVERS	2811
				BOWERS	3263
				QUEEN	3513
				PENROSE	3740
				GRAYBURG	4016
				SAN ANDRES	4476
				DELAWARE	4648
				BONE SPRING	5450
				BONE SPRING A ZONE	7350
				1ST BONE SPRINGS	7561
				BONE SPRING B ZONE	7790
				2ND BONE SPRINGS	8224
				BONE SPRING C ZONE	8690

32. Additional remarks (include plugging procedure):

GEOLOGIC TOPS: (continued)
16. BONE SPG 3RD SAND 8878
17. WOLFCAMP 9249
18. PENN SHALE 10600
19. STRAWN 11377
20. ATOKA 11750
21. MORROW CLASTICS 12372
22. LOWER MORROW 12620

33. Circle enclosed attachments:

- | | | | |
|---|--------------------|---------------|-----------------------|
| 1. Electrical/Mechanical Logs (1 full set req'd.) | 2. Geologic Report | 3. DST Report | 4. Directional Survey |
| 5. Sundry Notice for plugging and cement verification | 6. Core Analysis | 7. Other: | |

34. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records (see attached instructions):

Electronic Submission #24431 Verified by the BLM Well Information System.
For HARVEY E YATES COMPANY, sent to the Carlsbad
Committed to AFMSS for processing by ARMANDO LOPEZ on 12/12/2003 (04AL0002SE)

Name (please print) JEN ATKINSON

Title AUTHORIZED SIGNATURE

Signature (Electronic Submission)

Date 12/11/2003

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

**** REVISED ** REVISED ** REVISED ** REVISED ** REVISED ** REVISED ** REVISED ** REVISED ****

Additional data for transaction #24431 that would not fit on the form

26. Perforation Record, continued

Perf Interval	Size	No. Holes	Perf Status
8646 TO 8655		20	OPEN, PRODUCING

27. Acid, Fracture, Treatment, Cement Squeeze, etc., continued

Depth Interval	Amount and Type of Material
8646 TO 8655	3K GALS 15% NEFE/ FRAC W/6000# LITE PROP 20/40, 47K GALS MEDALLION, 73K# 20/40, 10K GAL PAD

32. Additional remarks, continued

23. UPPER MISS 12828



Scientific Drilling Survey

Company: HEYCO Date: 10/30/2003 Time: 11:17:43 Page: 1
Field: Cholla Co-ordinate(NE) Reference: Well: Cholla 1 Fed #4, Grid North
Site: Eddy County, NM Vertical (TVD) Reference: SITE 0.0
Well: Cholla 1 Fed #4 Section (VS) Reference: Well (0.00N,0.00E,282.43Azi)
Wellpath: Definitive Path Survey Calculation Method: Minimum Curvature Db: Sybase

Field: Cholla
Eddy County, NM
United States of America
Map System: US State Plane Coordinate System 1927 Map Zone: New Mexico, Eastern Zone
Geo Datum: NAD27 (Clarke 1866) Coordinate System: Well Centre
Sys Datum: Mean Sea Level Geomagnetic Model: Wmm_2000

Site: Eddy County, NM

Site Position: Northing: 646977.00 ft Latitude: 32 46 39.214 N
From: Map Easting: 659261.00 ft Longitude: 103 48 54.583 W
Position Uncertainty: 0.00 ft North Reference: Grid
Ground Level: 0.00 ft Grid Convergence: 0.28 deg

Well: Cholla 1 Fed #4 Slot Name:
Well Position: +N/-S 0.00 ft Northing: 646977.00 ft Latitude: 32 46 39.214 N
+E/-W 0.00 ft Easting: 659261.00 ft Longitude: 103 48 54.583 W
Position Uncertainty: 0.00 ft

Wellpath: Definitive Path Drilled From: Surface
Tie-on Depth: 0.00 ft
Current Datum: SITE Height 0.00 ft Above System Datum: Mean Sea Level
Magnetic Data: 12/20/2002 Declination: 8.80 deg
Field Strength: 49895 nT Mag Dip Angle: 60.90 deg
Vertical Section: Depth From (TVD) +N/-S Direction
ft ft ft deg
0.00 0.00 0.00 282.43

Survey

MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	ClsA deg	ClsD ft	Tool
0.00	0.00	359.72	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	TIE LINE
100.00	0.21	232.12	100.00	-0.11	-0.14	0.12	0.21	0.21	0.00	232.12	0.18	Keeper
200.00	0.21	232.43	200.00	-0.34	-0.43	0.35	0.00	0.00	0.31	232.22	0.55	Keeper
300.00	0.30	242.32	300.00	-0.57	-0.81	0.67	0.10	0.09	9.89	234.91	0.99	Keeper
400.00	0.24	243.79	400.00	-0.78	-1.23	1.03	0.06	-0.06	1.47	237.51	1.46	Keeper
500.00	0.30	239.21	500.00	-1.01	-1.64	1.39	0.06	0.06	-4.58	238.42	1.93	Keeper
600.00	0.30	247.74	599.99	-1.24	-2.11	1.79	0.04	0.00	8.53	239.49	2.45	Keeper
700.00	0.28	239.60	699.99	-1.47	-2.56	2.19	0.05	-0.02	-8.14	240.23	2.95	Keeper
800.00	0.22	217.02	799.99	-1.74	-2.89	2.45	0.11	-0.06	-22.58	238.90	3.38	Keeper
900.00	0.26	245.27	899.99	-1.99	-3.21	2.71	0.12	0.04	28.25	238.20	3.78	Keeper
1000.00	0.20	233.32	999.99	-2.19	-3.56	3.00	0.08	-0.06	-11.95	238.38	4.18	Keeper
1100.00	0.09	196.43	1099.99	-2.37	-3.72	3.12	0.14	-0.11	-36.89	237.50	4.41	Keeper
1200.00	0.03	70.13	1199.99	-2.44	-3.72	3.11	0.11	-0.06	-126.30	236.76	4.45	Keeper
1300.00	0.12	13.84	1299.99	-2.33	-3.67	3.08	0.11	0.09	-56.29	237.62	4.34	Keeper
1400.00	0.41	44.49	1399.99	-1.97	-3.39	2.89	0.31	0.29	30.65	239.86	3.92	Keeper
1500.00	0.37	37.65	1499.99	-1.46	-2.94	2.56	0.06	-0.04	-6.84	243.65	3.29	Keeper
1600.00	0.43	48.12	1599.98	-0.95	-2.47	2.21	0.09	0.06	10.47	248.90	2.65	Keeper
1700.00	0.33	35.47	1699.98	-0.47	-2.02	1.87	0.13	-0.10	-12.65	256.98	2.08	Keeper
1800.00	0.38	32.67	1799.98	0.05	-1.68	1.65	0.05	0.05	-2.80	271.58	1.68	Keeper
1900.00	0.38	36.66	1899.98	0.59	-1.30	1.40	0.03	0.00	3.99	294.48	1.43	Keeper
2000.00	0.50	36.60	1999.98	1.21	-0.84	1.08	0.12	0.12	-0.06	325.16	1.47	Keeper
2100.00	0.59	66.40	2099.97	1.76	-0.11	0.49	0.29	0.09	29.80	356.48	1.77	Keeper
2200.00	0.62	71.41	2199.97	2.14	0.88	-0.39	0.06	0.03	5.01	22.24	2.31	Keeper
2300.00	0.60	100.09	2299.96	2.22	1.90	-1.38	0.30	-0.02	28.68	40.58	2.93	Keeper
2400.00	0.58	96.35	2399.95	2.08	2.92	-2.41	0.04	-0.02	-3.74	54.62	3.58	Keeper
2500.00	0.63	98.65	2499.95	1.94	3.97	-3.46	0.06	0.05	2.30	63.99	4.42	Keeper
2600.00	0.75	94.82	2599.94	1.80	5.17	-4.66	0.13	0.12	-3.83	70.79	5.47	Keeper
2700.00	0.82	91.36	2699.93	1.73	6.53	-6.01	0.08	0.07	-3.46	75.19	6.76	Keeper



Scientific Drilling Survey

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Field: Cholla	Co-ordinate(NE) Reference: Well: Cholla 1 Fed #4, Grid North		
Site: Eddy County, NM	Vertical (TVD) Reference: SITE 0.0		
Well: Cholla 1 Fed #4	Section (VS) Reference: Well (0.00N,0.00E,282.43Azi)		
Wellpath: Definitive Path	Survey Calculation Method: Minimum Curvature	Db: Sybase	

Survey

MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	ClsA deg	ClsD ft	Tool
2800.00	0.58	100.86	2799.92	1.62	7.75	-7.22	0.27	-0.24	9.50	78.22	7.91	Keeper
2900.00	0.70	106.79	2899.92	1.34	8.83	-8.33	0.14	0.12	5.93	81.35	8.93	Keeper
3000.00	0.60	119.14	2999.91	0.91	9.87	-9.44	0.17	-0.10	12.35	84.72	9.91	Keeper
3100.00	0.60	115.75	3099.91	0.43	10.80	-10.45	0.04	0.00	-3.39	87.72	10.81	Keeper
3200.00	0.65	116.33	3199.90	-0.05	11.78	-11.51	0.05	0.05	0.58	90.24	11.78	Keeper
3300.00	0.64	115.55	3299.89	-0.54	12.79	-12.61	0.01	-0.01	-0.78	92.43	12.80	Keeper
3400.00	0.81	123.04	3399.89	-1.17	13.89	-13.81	0.19	0.17	7.49	94.81	13.94	Keeper
3500.00	0.85	123.37	3499.88	-1.96	15.10	-15.17	0.04	0.04	0.33	97.40	15.23	Keeper
3600.00	0.91	127.22	3599.86	-2.85	16.35	-16.58	0.08	0.06	3.85	99.89	16.60	Keeper
3700.00	0.88	127.99	3699.85	-3.80	17.59	-17.99	0.03	-0.03	0.77	102.20	17.99	Keeper
3800.00	0.98	127.51	3799.84	-4.80	18.87	-19.46	0.10	0.10	-0.48	104.26	19.47	Keeper
3900.00	1.18	120.94	3899.82	-5.85	20.43	-21.21	0.23	0.20	-6.57	105.97	21.25	Keeper
4000.00	1.18	121.28	3999.80	-6.91	22.20	-23.16	0.01	0.00	0.34	107.29	23.25	Keeper
4100.00	1.09	120.30	4099.78	-7.93	23.90	-25.04	0.09	-0.09	-0.98	108.35	25.18	Keeper
4200.00	1.05	123.59	4199.76	-8.91	25.48	-26.80	0.07	-0.04	3.29	109.28	27.00	Keeper
4300.00	0.95	123.59	4299.75	-9.88	26.94	-28.43	0.10	-0.10	0.00	110.14	28.69	Keeper
4400.00	0.97	123.06	4399.73	-10.80	28.34	-30.00	0.02	0.02	-0.53	110.86	30.32	Keeper
4500.00	0.83	128.96	4499.72	-11.72	29.61	-31.44	0.17	-0.14	5.90	111.59	31.84	Keeper
4600.00	0.90	124.77	4599.71	-12.62	30.82	-32.81	0.09	0.07	-4.19	112.27	33.30	Keeper
4700.00	0.89	120.96	4699.70	-13.47	32.13	-34.27	0.06	-0.01	-3.81	112.74	34.84	Keeper
4800.00	0.79	115.68	4799.69	-14.16	33.42	-35.68	0.13	-0.10	-5.28	112.97	36.29	Keeper
4900.00	0.77	117.61	4899.68	-14.77	34.63	-37.00	0.03	-0.02	1.93	113.10	37.65	Keeper
5000.00	0.75	116.20	4999.67	-15.37	35.81	-38.28	0.03	-0.02	-1.41	113.23	38.97	Keeper
5100.00	0.79	116.76	5099.66	-15.97	37.02	-39.59	0.04	0.04	0.56	113.34	40.32	Keeper
5200.00	0.80	114.96	5199.65	-16.58	38.27	-40.94	0.03	0.01	-1.80	113.43	41.70	Keeper
5300.00	0.64	126.00	5299.64	-17.20	39.35	-42.13	0.21	-0.16	11.04	113.61	42.95	Keeper
5360.00	0.98	113.13	5359.64	-17.60	40.09	-42.94	0.64	0.57	-21.45	113.70	43.79	Keeper
5454.00	0.70	112.80	5453.63	-18.14	41.36	-44.30	0.30	-0.30	-0.35	113.68	45.16	MWD
5537.00	0.50	299.30	5536.62	-18.16	41.51	-44.45	1.44	-0.24	-209.04	113.62	45.31	MWD
5630.00	2.70	283.50	5629.58	-17.45	39.03	-41.87	2.39	2.37	-16.99	114.09	42.75	MWD
5724.00	4.40	286.60	5723.40	-15.90	33.42	-36.06	1.82	1.81	3.30	115.44	37.01	MWD
5818.00	6.40	287.70	5816.98	-13.28	24.97	-27.25	2.13	2.13	1.17	118.00	28.28	MWD
5912.00	9.10	286.10	5910.11	-9.62	12.84	-14.61	2.88	2.87	-1.70	126.85	16.04	MWD
6005.00	10.80	286.70	6001.71	-5.08	-2.57	1.42	1.83	1.83	0.65	206.88	5.69	MWD
6099.00	11.90	286.80	6093.87	0.25	-20.29	19.87	1.17	1.17	0.11	270.72	20.29	MWD
6193.00	13.50	280.90	6185.57	5.13	-40.34	40.50	2.19	1.70	-6.28	277.25	40.67	MWD
6286.00	15.10	281.20	6275.68	9.54	-62.89	63.47	1.72	1.72	0.32	278.62	63.61	MWD
6380.00	15.40	280.70	6366.37	14.23	-87.16	88.18	0.35	0.32	-0.53	279.27	88.32	MWD
6473.00	15.60	280.50	6455.99	18.80	-111.59	113.02	0.22	0.22	-0.22	279.56	113.16	MWD
6569.00	15.60	280.00	6548.46	23.40	-136.99	138.82	0.14	0.00	-0.52	279.69	138.98	MWD
6663.00	15.90	284.20	6638.93	28.75	-161.92	164.32	1.25	0.32	4.47	280.07	164.46	MWD
6757.00	15.90	283.70	6729.33	34.96	-186.92	190.06	0.15	0.00	-0.53	280.59	190.16	MWD
6850.00	16.10	281.80	6818.73	40.61	-211.92	215.69	0.60	0.22	-2.04	280.85	215.77	MWD
6943.00	15.90	280.50	6908.13	45.57	-237.07	241.32	0.44	-0.22	-1.40	280.88	241.41	MWD
7037.00	15.60	284.60	6998.60	51.10	-261.96	266.82	1.23	-0.32	4.36	281.04	266.90	MWD
7131.00	14.90	279.40	7089.30	56.26	-286.11	291.52	1.63	-0.74	-5.53	281.13	291.59	MWD
7225.00	13.90	281.00	7180.34	60.39	-309.12	314.87	1.14	-1.06	1.70	281.05	314.96	MWD
7318.00	13.60	284.60	7270.68	65.28	-330.67	336.97	0.97	-0.32	3.87	281.17	337.05	MWD
7412.00	14.80	285.30	7361.80	71.23	-352.94	360.00	1.29	1.28	0.74	281.41	360.06	MWD
7506.00	13.90	284.00	7452.87	77.13	-375.48	383.28	1.02	-0.96	-1.38	281.61	383.32	MWD
7600.00	13.20	283.40	7544.25	82.35	-396.88	405.30	0.76	-0.74	-0.64	281.72	405.33	MWD
7694.00	12.90	282.40	7635.83	87.09	-417.56	426.52	0.40	-0.32	-1.06	281.78	426.55	MWD



Scientific Drilling Survey

Company: HEYCO	Date: 10/30/2003	Time: 11:17:43	Page: 3
Field: Cholla	Co-ordinate(NE) Reference: Well: Cholla 1 Fed #4, Grid North		
Site: Eddy County, NM	Vertical (TVD) Reference: SITE 0.0		
Well: Cholla 1 Fed #4	Section (VS) Reference: Well (0.00N,0.00E,282.43Azi)		
Wellpath: Definitive Path	Survey Calculation Method: Minimum Curvature	Db: Sybase	

Survey

MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	ClsA deg	ClsD ft	Tool
7788.00	12.40	281.40	7727.54	91.34	-437.71	447.11	0.58	-0.53	-1.06	281.79	447.13	MWD
7881.00	11.80	282.40	7818.48	95.36	-456.78	466.60	0.68	-0.65	1.08	281.79	466.63	MWD
7975.00	11.10	282.70	7910.61	99.41	-475.00	485.26	0.75	-0.74	0.32	281.82	485.29	MWD
8069.00	10.30	286.00	8002.97	103.72	-491.90	502.70	1.07	-0.85	3.51	281.91	502.72	MWD
8163.00	9.10	288.90	8095.63	108.44	-507.01	518.47	1.38	-1.28	3.09	282.07	518.48	MWD
8256.00	7.90	286.90	8187.60	112.68	-520.09	532.15	1.33	-1.29	-2.15	282.22	532.15	MWD
8350.00	7.60	285.90	8280.75	116.26	-532.25	544.79	0.35	-0.32	-1.06	282.32	544.80	MWD
8444.00	6.70	288.20	8374.01	119.68	-543.43	556.45	1.00	-0.96	2.45	282.42	556.45	MWD
8538.00	5.60	290.70	8467.47	123.01	-552.93	566.45	1.20	-1.17	2.66	282.54	566.45	MWD
8631.00	5.80	288.30	8560.01	126.09	-561.64	575.61	0.33	0.22	-2.58	282.65	575.62	MWD
8725.00	5.00	288.50	8653.59	128.88	-570.03	584.41	0.85	-0.85	0.21	282.74	584.42	MWD
8819.00	4.10	286.60	8747.30	131.14	-577.14	591.84	0.97	-0.96	-2.02	282.80	591.85	MWD
8882.00	4.40	286.30	8810.12	132.46	-581.62	596.49	0.48	0.48	-0.48	282.83	596.51	MWD
8976.00	2.80	276.90	8903.94	133.75	-587.36	602.38	1.81	-1.70	-10.00	282.83	602.39	MWD
9069.00	1.60	277.60	8996.87	134.19	-590.90	605.93	1.29	-1.29	0.75	282.80	605.95	MWD
9163.00	1.60	279.80	9090.83	134.59	-593.49	608.55	0.07	0.00	2.34	282.78	608.56	MWD
9256.00	1.60	304.40	9183.79	135.55	-595.84	611.05	0.73	0.00	26.45	282.82	611.07	MWD
9350.00	0.90	292.00	9277.77	136.58	-597.60	612.99	0.79	-0.74	-11.91	282.87	613.01	MWD
9413.00	0.70	273.20	9340.76	136.79	-598.44	613.86	0.56	-0.32	-33.65	282.87	613.88	MWD
9507.00	0.70	248.70	9434.76	136.60	-599.55	614.90	0.30	0.00	-24.79	282.83	614.92	MWD
9601.00	1.10	282.70	9528.75	136.59	-600.97	616.28	0.69	0.43	36.17	282.80	616.29	MWD
9664.00	1.30	307.30	9591.73	137.15	-602.13	617.53	0.87	0.32	39.05	282.83	617.55	MWD
9758.00	0.30	302.50	9685.72	137.93	-603.18	618.73	1.07	-1.06	-5.11	282.88	618.75	MWD
9851.00	0.50	268.10	9778.72	138.05	-603.79	619.35	0.33	0.22	-36.99	282.88	619.37	MWD
9945.00	0.60	267.20	9872.72	138.01	-604.69	620.23	0.11	0.11	-0.96	282.86	620.24	MWD
10039.00	0.50	277.10	9966.71	138.04	-605.59	621.11	0.15	-0.11	10.53	282.84	621.13	MWD
10133.00	0.50	258.00	10060.71	138.00	-606.40	621.89	0.18	0.00	-20.32	282.82	621.91	MWD
10227.00	0.70	253.80	10154.70	137.76	-607.35	622.77	0.22	0.21	-4.47	282.78	622.78	MWD
10289.00	1.00	242.90	10216.70	137.41	-608.20	623.52	0.55	0.48	-17.58	282.73	623.53	MWD
10383.00	0.90	288.30	10310.69	137.27	-609.63	624.89	0.79	-0.11	48.30	282.69	624.89	MWD
10446.00	0.60	66.90	10373.68	137.55	-609.80	625.11	2.23	-0.48	220.00	282.71	625.12	MWD
10540.00	0.70	70.80	10467.68	137.93	-608.80	624.22	0.12	0.11	4.15	282.77	624.23	MWD
10633.00	0.10	151.60	10560.67	138.05	-608.23	623.68	0.74	-0.65	86.88	282.79	623.70	MWD
10727.00	0.10	180.00	10654.67	137.89	-608.19	623.61	0.05	0.00	30.21	282.77	623.62	MWD
10821.00	0.40	166.00	10748.67	137.49	-608.11	623.45	0.32	0.32	-14.89	282.74	623.46	MWD
10914.00	0.70	180.20	10841.67	136.61	-608.03	623.18	0.35	0.32	15.27	282.66	623.19	MWD
11008.00	0.70	256.40	10935.66	135.90	-608.59	623.58	0.92	0.00	81.06	282.59	623.58	MWD
11102.00	1.30	281.20	11029.65	135.97	-610.20	625.16	0.77	0.64	26.38	282.56	625.16	MWD
11143.00	1.50	297.90	11070.64	136.31	-611.13	626.14	1.10	0.49	40.73	282.57	626.14	MWD
11196.00	1.50	288.80	11123.62	136.86	-612.40	627.50	0.45	0.00	-17.17	282.60	627.50	MWD
11227.00	1.30	291.40	11154.61	137.12	-613.11	628.25	0.68	-0.65	8.39	282.61	628.25	MWD
11290.00	1.80	287.40	11217.59	137.68	-614.72	629.94	0.81	0.79	-6.35	282.62	629.95	MWD
11352.00	1.10	298.20	11279.57	138.25	-616.17	631.49	1.21	-1.13	17.42	282.65	631.49	MWD
11383.00	0.80	293.50	11310.56	138.48	-616.63	631.98	1.00	-0.97	-15.16	282.66	631.99	MWD
11480.00	0.80	165.20	11407.56	138.09	-617.08	632.34	1.48	0.00	-132.27	282.61	632.34	MWD
11574.00	0.50	168.00	11501.55	137.06	-616.83	631.87	0.32	-0.32	2.98	282.53	631.87	MWD
11667.00	1.00	181.70	11594.54	135.85	-616.77	631.55	0.57	0.54	14.73	282.42	631.55	MWD
11759.00	1.20	190.70	11686.53	134.10	-616.97	631.37	0.29	0.22	9.78	282.26	631.37	MWD
11851.00	1.10	139.30	11778.51	132.48	-616.57	630.64	1.09	-0.11	-55.87	282.13	630.65	MWD
11881.00	1.20	133.20	11808.50	132.05	-616.16	630.14	0.53	0.33	-20.33	282.10	630.15	MWD
11973.00	1.30	174.30	11900.48	130.35	-615.35	628.98	0.96	0.11	44.67	281.96	629.00	MWD
12065.00	0.70	333.80	11992.48	129.82	-615.49	629.01	2.14	-0.65	173.37	281.91	629.04	MWD
12156.00	0.90	343.30	12083.47	131.00	-615.95	629.71	0.26	0.22	10.44	282.01	629.72	MWD



Scientific Drilling Survey

Company: HEYCO	Date: 10/30/2003	Time: 11:17:43	Page: 4
Field: Cholla	Co-ordinate(NE) Reference: Well: Cholla 1 Fed #4, Grid North		
Site: Eddy County, NM	Vertical (TVD) Reference: SITE 0.0		
Well: Cholla 1 Fed #4	Section (VS) Reference: Well (0.00N,0.00E,282.43Azi)		
Wellpath: Definitive Path	Survey Calculation Method: Minimum Curvature	Db: Sybase	

Survey

MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	ClsA deg	ClsD ft	Tool
12248.00	0.90	316.30	12175.46	132.22	-616.65	630.66	0.46	0.00	-29.35	282.10	630.67	MWD
12341.00	0.70	325.70	12268.45	133.21	-617.48	631.68	0.26	-0.22	10.11	282.17	631.68	MWD
12433.00	0.80	299.00	12360.44	133.99	-618.36	632.70	0.39	0.11	-29.02	282.23	632.71	MWD
12525.00	0.90	305.20	12452.43	134.72	-619.51	633.98	0.15	0.11	6.74	282.27	633.99	MWD
12617.00	0.90	294.80	12544.42	135.44	-620.75	635.36	0.18	0.00	-11.30	282.31	635.36	MWD
12711.00	0.90	289.20	12638.41	135.99	-622.12	636.81	0.09	0.00	-5.96	282.33	636.81	MWD
12790.00	0.70	315.90	12717.40	136.54	-623.04	637.83	0.53	-0.25	33.80	282.36	637.83	MWD
12830.00	0.70	315.90	12757.40	136.89	-623.38	638.24	0.00	0.00	0.00	282.39	638.24	MWD