

Submit to Appropriate
District Office
State Lease - 6 copies
Fee Lease - 5 copies
DISTRICT I
P.O. Box 1980, Hobbs, NM 88240

DISTRICT II
P.O. Drawer DD, Artesia, NM 88210

DISTRICT III
1000 Rio Brazos Rd, Aztec, NM 87410

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-105
Revised 1-1-89

OIL CONSERVATION DIVISION

2040 Pacheco St.
Santa Fe, NM 87505

WELL API NO.
30-015-33317

5. Indicate Type of Lease

STATE ☐

FEE ☒

6. State Oil & Gas Lease No.

WELL COMPLETION OR RECOMPLETION REPORT AND LOG

1a. Type of Well:
OIL WELL ☒ GAS WELL ☐ DRY ☐ OTHER ☐

b. Type of Completion:
NEW WELL ☒ WORK OVER ☐ DEEPEN ☐ PLUG BACK ☐ DIFF RESVR ☐ OTHER ☐

7. Lease Name or Unit Agreement Name

Harroun 15

RECEIVED

DEC - 7 2004

2. Name of Operator
Pogo Producing Company

8. Well No.
15

OOD-ARTESIA

3. Address of Operator
P. O. Box 10340, Midland, TX 79702-7340

9. Pool name or Wildcat
Pierce Crossing Bone Spring, E.

4. Well Location
Unit Letter E : 1980 Feet From The North Line and 990 Feet From The West Line
Section 15 Township 24S Range 29E NMPM Eddy County

10. Date Spudded 8/12/04 11. Date T.D. Reached 9/15/04 12. Date Compl. (Ready to Prod.) 10/21/04 13. Elevations (DF & RKB, RT, GR, etc.) 2928 14. Elev. Casinghead 2929

15. Total Depth 10,192 16. Plug Back T.D. 10,102 17. If Multiple Compl. How Many Zones? 18. Intervals Drilled By 19. Producing Interval(s), of this completion - Top, Bottom, Name 20. Was Directional Survey Made Yes

21. Type Electric and Other Logs Run DLL/MLL, ZDL/CN/GR 22. Was Well Cored No

CASING RECORD (Report all strings set in well)

CASING SIZE	WEIGHT LB/FT.	DEPTH SET	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
13-3/8	48	545	17-1/2	800 sks	
9-5/8	36	2865	12-1/4	800 sks	
5-1/2	17	10,192	8-1/2 - 7-7/8	890 sks	

LINER RECORD				TUBING RECORD		
SIZE	TOP	BOTTOM	SACKS CEMENT	SCREEN	SIZE	DEPTH SET
					2-3/8	7202

26. Perforation record (interval, size, and number)		27. ACID, SHOT, FRACTURE, CEMENT, SQUEEZE, ETC.	
10100, 9851, 9399, 9153 (7 spf)		DEPTH INTERVAL	AMOUNT AND KIND MATERIAL USED
8852, 8550, 8249 (6 spf)		8249-10100(OA)	Acdz w/ 5375 qaIs 7-1/2% acid
			Frac w/ 237,000# 20/40 TLC

PRODUCTION

Date First Production 10/21/04 Production Method (Flowing, gas lift, pumping - Size and type pump) Flowing Well Status (Prod. or Shut-in) Producing

Date of Test 11/6/04 Hours Tested 24 Choke Size 12/64 Prod'n For Test Period Oil - BbL. 122 Gas - MCF 229 Water - BbL. 57 Gas - Oil Ratio 1877:1

Flow Tubing Press. 810 Casing Pressure 1960 Calculated 24-Hour Rate Oil - BbL. Gas - MCF Water - BbL. Oil Gravity - API - (Corr.) 41.8

29. Disposition of Gas (Sold, used for fuel, vented, etc.) Sold Test Witnessed By Jack Burnett

30. List Attachments C-102, C-104, Logs, Deviation Surveys

31. I hereby certify that the information shown on both sides of this form is true and complete to the best of my knowledge and belief

Signature Cathy Wright Printed Name Cathy Wright Title Sr Eng Tech Date 12/6/04

INSTRUCTIONS

This form is to be filed with the appropriate District Office of the Division not later than 20 days after the completion of any newly-drilled or deepened well. It shall be accompanied by one copy of all electrical and radio-activity logs run on the well and a summary of all specific tests conducted, including drill stem tests. All depths reported shall be measured depths. In the case of directionally drilled wells, true vertical depths shall also be reported. For multiple completions, Items 25 through 29 shall be reported for each zone. The form is to be filed in quintuplicate except on state land, where six copies are required. See Rule 1105.

INDICATE FORMATION TOPS IN CONFORMANCE WITH GEOGRAPHICAL SECTION OF STATE

Southeastern New Mexico

Northwestern New Mexico

T. Anhy _____	T. Canyon _____	T. Ojo Alamo _____	T. Penn. "B" _____
T. Salt _____	T. Strawn _____	T. Kirtland-Fruitland _____	T. Penn. "C" _____
B. Salt _____	T. Atoka _____	T. Pictured Cliffs _____	T. Penn. "D" _____
T. Yates _____	T. Miss _____	T. Cliff House _____	T. Leadville _____
T. 7 Rivers _____	T. Devonian _____	T. Menefee _____	T. Madison _____
T. Queen _____	T. Silurian _____	T. Point Lookout _____	T. Elbert _____
T. Grayburg _____	T. Montoya _____	T. Mancos _____	T. McCracken _____
T. San Andres _____	T. Simpson _____	T. Gallup _____	T. Ignacio Otzte _____
T. Glorieta _____	T. McKee _____	Base Greenhorn _____	T. Granite _____
T. Paddock _____	T. Ellenburger _____	T. Dakota _____	T. _____
T. Blinbry _____	T. Gr. Wash _____	T. Morrison _____	T. _____
T. Tubb _____	T. Delaware Sand _____	T. Todilto _____	T. _____
T. Drinkard _____	T. Bone Springs _____	T. Entrada _____	T. _____
T. Abo _____	T. _____	T. Wingate _____	T. _____
T. Wolfcamp _____	T. _____	T. Chinle _____	T. _____
T. Penn _____	T. _____	T. Permian _____	T. _____
T. Cisco (Bough C) _____	T. _____	T. Penn. "A" _____	T. _____

OIL OR GAS SANDS OR ZONES

No. 1, from _____ to _____ No. 3, from _____ to _____
 No. 2, from _____ to _____ No. 4, from _____ to _____

IMPORTANT WATER SANDS

Include data on rate of water inflow and elevation to which water rose in hole.

No. 1, from _____ to _____ feet _____
 No. 2, from _____ to _____ feet _____
 No. 3, from _____ to _____ feet _____

LITHOLOGY RECORD (Attach additional sheet if necessary)

From	To	Thickness in Feet	Lithology	From	To	Thickness in Feet	Lithology
		2725	Basal Anhydrite				
		2958	Delaware Lime				
		2986	Bell Canyon				
		3809	Cherry Canyon				
		5034	Brushy Canyon				
		6671	Bone Spring				
		7684	1st BS Sd				

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Rd., Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-102
Revised June 10, 2003
Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies
☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-015-33317		² Pool Code 96473		³ Pool Name Pierce Crossing Bone Spring East	
⁴ Property Code 17565		⁵ Property Name Harroun 15		⁶ Well Number 15	
⁷ OGRID No. 017891		⁸ Operator Name Pogo Producing Company		⁹ Elevation 2928	

¹⁰ Surface Location

UL or lot no. E	Section 15	Township 24S	Range 29E	Lot Idn	Feet from the 1980	North/South line North	Feet from the 990	East/West line West	County Eddy
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¹¹ Bottom Hole Location If Different From Surface

UL or lot no. G	Section 15	Township 24S	Range 29E	Lot Idn	Feet from the 1979	North/South line North	Feet from the 1658	East/West line East	County Eddy
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¹² Dedicated Acres 80	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
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NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

¹⁶				¹⁷ OPERATOR CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief. Signature Cathy Wright Printed Name Sr Eng Tech Title and E-mail Address 12/6/04 Date	
RECEIVED DEC - 7 2004 OGD-ARTESIA				¹⁸ SURVEYOR CERTIFICATION I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief. Date of Survey Signature and Seal of Professional Surveyor:	
				Certificate Number	

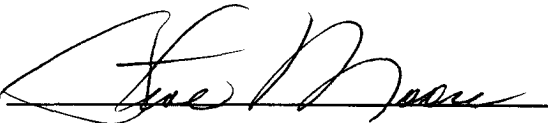
OPERATOR: POGO PRODUCING
WELL/LEASE: HARROUN 15 #15
COUNTY: EDDY, NM

078-0026

STATE OF NEW MEXICO
DEVIATION REPORT

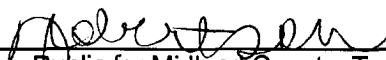
232	1/2	7,420	1 3/4
746	3/4	7,518	1
969	1/4	7,773	1 3/4
1,195	3/4		
1,416	1		
1,640	2		
1,769	1 1/2		
1,893	1 1/4		
2,148	1		
2,374	1 1/4		
2,598	2 1/4		
2,721	2 1/4		
2,865	1 3/4		
3,042	1/2		
3,360	3/4		
3,682	3/4		
4,002	1/4		
4,321	1		
4,641	3/4		
4,959	1		
5,281	1/2		
5,598	1/4		
5,919	1/2		
6,239	3/4		
6,526	3/4		
6,876	1		
7,198	3		
7,324	3 1/4		

CONFIDENTIAL

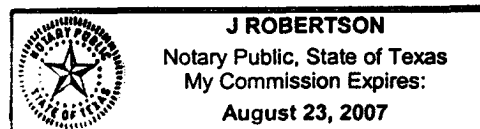
By: 

STATE OF TEXAS
COUNTY OF MIDLAND

The foregoing instrument was acknowledged before me on this 6th day of October, 2004, by Steve Moore on behalf of Patterson-UTI Drilling Company LP, LLLP.

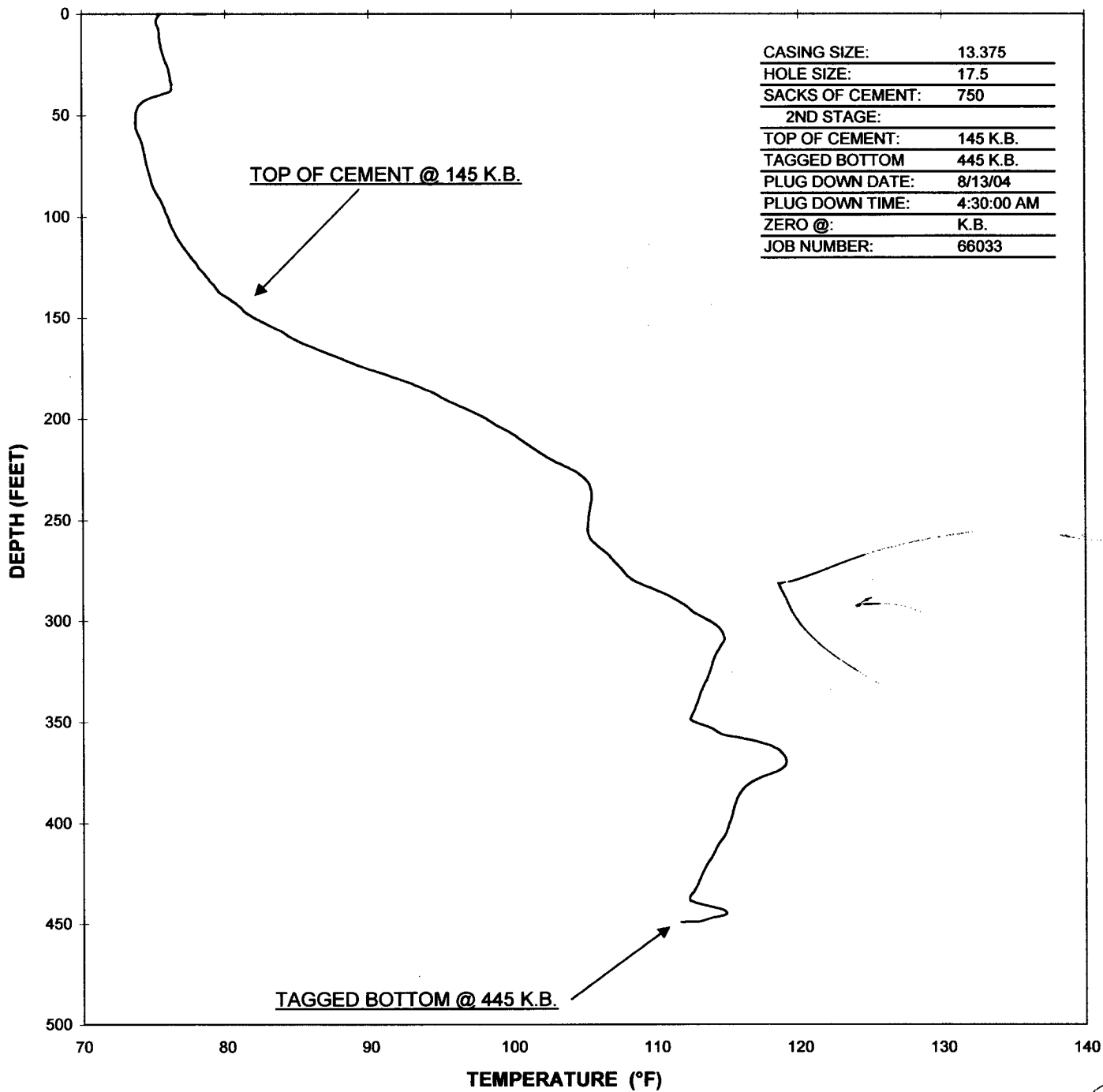

Notary Public for Midland County, Texas

My Commission Expires: 8/23/2007





CONFIDENTIAL



COMPANY: POGO PRODUCING LEASE: HARROUN WELL NO.: 1515
FIELD: TIRCE CROSSING COUNTY: EDDY DATE: 8/13/04

PathFinder

Survey Report

Company: POGO Producing Company		Date: 9/21/2004		Time: 14:40:03		Page: 1	
Field: Section 32, T-19S, R-27E		Co-ordinate(NE) Reference: Well: Harroun 15 #15-H, True North					
Site: Harroun "15" #15-H		Vertical (TVD) Reference: System: Mean Sea Level					
Well: Harroun 15 #15-H		Section (VS) Reference: Well (0.00N,0.00E,90.00Azi)					
Wellpath: Harroun "15" #15-H		Survey Calculation Method: Minimum Curvature		Db: Sybase			

Field: Section 32, T-19S, R-27E Eddy County, NM USA			
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: igrf2000	

Site: Harroun "15" #15-H Section 15, T24S & R29E Eddy County, New Mexico			
Site Position:	Northing: 443687.03 ft	Latitude: 32 13 9.520 N	
From: Geographic	Easting: 610131.02 ft	Longitude: 103 58 37.980 W	
Position Uncertainty: 0.00 ft		North Reference: True	
Ground Level: 2928.00 ft		Grid Convergence: 0.19 deg	

Well: Harroun 15 #15-H		Slot Name:	
Well Position: +N/-S 0.00 ft	Northing: 443687.03 ft	Latitude: 32 13 9.520 N	
+E/-W 0.00 ft	Easting: 610131.02 ft	Longitude: 103 58 37.980 W	
Position Uncertainty: 0.00 ft			

Wellpath: Harroun "15" #15-H		Drilled From: Surface	
Current Datum: Mean Sea Level	Height 0.00 ft	Tie-on Depth: 0.00 ft	
Magnetic Data: 8/27/2004		Above System Datum: Mean Sea Level	
Field Strength: 49434 nT		Declination: 8.78 deg	
Vertical Section: Depth From (TVD)	+N/-S	Mag Dip Angle: 60.36 deg	
ft	ft	+E/-W	Direction
		ft	deg
0.00	0.00	0.00	90.00

Survey: PathFinder MWD Surveys		Start Date: 9/2/2004	
Company: PathFinder Energy Services		Engineer: Ron McIntyre	
Tool:		Tied-to: From: Definitive Path	

Survey: PathFinder MWD Surveys

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	Tool/Comment
7200.00	3.21	239.95	7199.00	-56.40	-6.55	-6.55	0.00	0.00	0.00	
7227.00	2.64	238.88	7225.97	-57.10	-7.74	-7.74	2.12	-2.11	-3.96	
7259.00	0.97	197.66	7257.95	-57.74	-8.45	-8.45	6.30	-5.22	-128.81	
7291.00	3.08	93.59	7289.93	-58.06	-7.68	-7.68	10.77	6.59	-325.22	
7323.00	6.77	78.74	7321.81	-57.74	-4.97	-4.97	12.11	11.53	-46.41	
7355.00	10.46	79.27	7353.45	-56.83	-0.26	-0.26	11.53	11.53	1.66	
7387.00	13.63	80.06	7384.74	-55.64	6.31	6.31	9.92	9.91	2.47	
7419.00	16.71	81.99	7415.62	-54.35	14.58	14.58	9.75	9.62	6.03	
7450.00	19.96	82.87	7445.04	-53.07	24.24	24.24	10.52	10.48	2.84	
7482.00	22.95	81.99	7474.82	-51.52	35.84	35.84	9.40	9.34	-2.75	
7514.00	26.47	81.11	7503.89	-49.55	49.07	49.07	11.06	11.00	-2.75	
7546.00	30.34	79.80	7532.03	-47.01	64.08	64.08	12.25	12.09	-4.09	
7578.00	33.77	82.26	7559.15	-44.38	80.85	80.85	11.47	10.72	7.69	
7610.00	37.28	81.20	7585.19	-41.70	99.25	99.25	11.14	10.97	-3.31	
7649.00	42.56	82.82	7615.09	-38.25	124.02	124.02	13.80	13.54	4.15	
7681.00	49.07	82.44	7637.38	-35.30	146.77	146.77	20.36	20.34	-1.19	
7713.00	56.37	83.69	7656.75	-32.24	172.03	172.03	23.02	22.81	3.91	
7744.00	63.84	86.03	7672.19	-29.86	198.77	198.77	24.97	24.10	7.55	
7775.00	66.48	86.36	7685.21	-27.99	226.84	226.84	8.57	8.52	1.06	
7808.00	69.29	86.57	7697.63	-26.11	257.35	257.35	8.54	8.52	0.64	
7840.00	72.19	86.59	7708.19	-24.30	287.50	287.50	9.06	9.06	0.06	
7872.00	75.36	87.04	7717.13	-22.60	318.18	318.18	10.00	9.91	1.41	
7904.00	77.65	87.58	7724.60	-21.14	349.26	349.26	7.34	7.16	1.69	
7936.00	80.20	88.35	7730.74	-20.02	380.64	380.64	8.31	7.97	2.41	

PathFinder Survey Report

Company: POGO Producing Company
 Field: Section 32, T-19S, R-27E
 Site: Harroun "15" #15-H
 Well: Harroun 15 #15-H
 Wellpath: Harroun "15" #15-H

Date: 9/21/2004 Time: 14:40:03 Page: 2
 Co-ordinate(NE) Reference: Well: Harroun 15 #15-H, True North
 Vertical (TVD) Reference: System: Mean Sea Level
 Section (VS) Reference: Well (0.00N,0.00E,90.00Azi)
 Survey Calculation Method: Minimum Curvature Db: Sybase

Survey: PathFinder MWD Surveys

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	Tool/Comment
7961.00	82.75	86.83	7734.45	-18.98	405.34	405.34	11.84	10.20	-6.08	
7993.00	84.50	86.91	7738.00	-17.25	437.09	437.09	5.47	5.47	0.25	
8024.00	85.03	87.00	7740.83	-15.61	467.92	467.92	1.73	1.71	0.29	
8056.00	86.83	84.59	7743.10	-13.27	499.75	499.75	9.38	5.62	-7.53	
8088.00	85.38	86.56	7745.27	-10.80	531.58	531.58	7.63	-4.53	6.16	
8120.00	88.20	87.09	7747.07	-9.03	563.48	563.48	8.97	8.81	1.66	
8152.00	89.52	88.06	7747.70	-7.68	595.44	595.44	5.12	4.12	3.03	
8184.00	88.11	87.27	7748.36	-6.38	627.40	627.40	5.05	-4.41	-2.47	
8216.00	88.55	87.18	7749.30	-4.83	659.35	659.35	1.40	1.37	-0.28	
8248.00	88.64	87.27	7750.08	-3.28	691.31	691.31	0.40	0.28	0.28	
8280.00	89.60	87.62	7750.57	-1.85	723.27	723.27	3.19	3.00	1.09	
8312.00	89.60	87.44	7750.80	-0.47	755.24	755.24	0.56	0.00	-0.56	
8344.00	89.69	87.44	7750.99	0.96	787.21	787.21	0.28	0.28	0.00	
8376.00	88.81	86.91	7751.41	2.53	819.17	819.17	3.21	-2.75	-1.66	
8408.00	89.52	87.00	7751.88	4.23	851.12	851.12	2.24	2.22	0.28	
8440.00	87.92	88.32	7752.59	5.54	883.08	883.08	6.48	-5.00	4.12	
8472.00	87.05	88.15	7754.00	6.52	915.03	915.03	2.77	-2.72	-0.53	
8504.00	86.79	87.53	7755.72	7.73	946.96	946.96	2.10	-0.81	-1.94	
8536.00	87.41	87.62	7757.34	9.08	978.89	978.89	1.96	1.94	0.28	
8568.00	88.99	87.88	7758.34	10.34	1010.85	1010.85	5.00	4.94	0.81	
8600.00	90.48	88.32	7758.49	11.40	1042.83	1042.83	4.86	4.66	1.37	
8632.00	90.75	88.41	7758.15	12.31	1074.82	1074.82	0.89	0.84	0.28	
8664.00	90.13	88.06	7757.90	13.29	1106.80	1106.80	2.22	-1.94	-1.09	
8696.00	90.40	87.97	7757.75	14.40	1138.78	1138.78	0.89	0.84	-0.28	
8728.00	89.43	88.76	7757.80	15.32	1170.77	1170.77	3.91	-3.03	2.47	
8760.00	89.34	89.73	7758.14	15.74	1202.77	1202.77	3.04	-0.28	3.03	
8792.00	88.99	89.82	7758.61	15.86	1234.76	1234.76	1.13	-1.09	0.28	
8824.00	88.90	89.55	7759.20	16.04	1266.76	1266.76	0.89	-0.28	-0.84	
8856.00	90.04	89.73	7759.50	16.24	1298.75	1298.75	3.61	3.56	0.56	
8888.00	91.01	89.82	7759.20	16.37	1330.75	1330.75	3.04	3.03	0.28	
8920.00	90.40	91.05	7758.81	16.12	1362.75	1362.75	4.29	-1.91	3.84	
8952.00	88.90	92.45	7759.00	15.15	1394.73	1394.73	6.41	-4.69	4.37	
8984.00	88.11	93.15	7759.84	13.58	1426.68	1426.68	3.30	-2.47	2.19	
9016.00	87.93	93.15	7760.94	11.83	1458.61	1458.61	0.56	-0.56	0.00	
9048.00	88.11	93.51	7762.05	9.97	1490.54	1490.54	1.26	0.56	1.12	
9080.00	86.61	92.89	7763.52	8.18	1522.45	1522.45	5.07	-4.69	-1.94	
9112.00	86.09	92.10	7765.56	6.79	1554.36	1554.36	2.95	-1.62	-2.47	
9144.00	86.09	92.19	7767.74	5.60	1586.26	1586.26	0.28	0.00	0.28	
9176.00	85.91	92.28	7769.98	4.35	1618.16	1618.16	0.63	-0.56	0.28	
9208.00	85.47	91.40	7772.38	3.33	1650.05	1650.05	3.07	-1.37	-2.75	
9240.00	85.56	90.96	7774.88	2.67	1681.95	1681.95	1.40	0.28	-1.37	
9272.00	84.06	90.52	7777.78	2.26	1713.81	1713.81	4.88	-4.69	-1.37	
9296.00	83.45	89.38	7780.39	2.28	1737.67	1737.67	5.36	-2.54	-4.75	
9328.00	83.62	89.46	7783.99	2.60	1769.46	1769.46	0.59	0.53	0.25	
9360.00	83.71	89.64	7787.52	2.85	1801.27	1801.27	0.63	0.28	0.56	
9392.00	84.24	89.55	7790.88	3.08	1833.09	1833.09	1.68	1.66	-0.28	
9424.00	85.03	89.38	7793.87	3.38	1864.95	1864.95	2.52	2.47	-0.53	
9456.00	85.91	89.29	7796.40	3.75	1896.85	1896.85	2.76	2.75	-0.28	
9497.00	85.91	89.26	7799.32	4.26	1937.74	1937.74	0.07	0.00	-0.07	
9529.00	85.24	88.78	7801.79	4.81	1969.64	1969.64	2.57	-2.09	-1.50	
9561.00	85.38	88.50	7804.41	5.57	2001.52	2001.52	0.98	0.44	-0.87	
9593.00	85.82	88.85	7806.87	6.30	2033.42	2033.42	1.75	1.37	1.09	
9625.00	86.35	89.55	7809.05	6.75	2065.34	2065.34	2.74	1.66	2.19	

PathFinder

Survey Report

Company: POGO Producing Company
Field: Section 32, T-19S, R-27E
Site: Harroun "15" #15-H
Well: Harroun 15 #15-H
Wellpath: Harroun "15" #15-H

Date: 9/21/2004 **Time:** 14:40:03 **Page:** 3
Co-ordinate(NE) Reference: Well: Harroun 15 #15-H, True North
Vertical (TVD) Reference: System: Mean Sea Level
Section (VS) Reference: Well (0.00N,0.00E,90.00Azi)
Survey Calculation Method: Minimum Curvature **Db:** Sybase

Survey: PathFinder MWD Surveys

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	Tool/Comment
9657.00	87.05	89.82	7810.89	6.92	2097.29	2097.29	2.34	2.19	0.84	
9689.00	87.14	90.17	7812.51	6.93	2129.25	2129.25	1.13	0.28	1.09	
9721.00	87.93	90.43	7813.89	6.76	2161.22	2161.22	2.60	2.47	0.81	
9753.00	88.11	90.78	7815.00	6.42	2193.19	2193.19	1.23	0.56	1.09	
9785.00	88.02	90.52	7816.08	6.06	2225.17	2225.17	0.86	-0.28	-0.81	
9817.00	88.55	90.52	7817.03	5.77	2257.16	2257.16	1.66	1.66	0.00	
9849.00	90.31	90.69	7817.35	5.43	2289.15	2289.15	5.53	5.50	0.53	
9881.00	90.57	90.69	7817.11	5.05	2321.15	2321.15	0.81	0.81	0.00	
9913.00	91.28	91.05	7816.59	4.56	2353.14	2353.14	2.49	2.22	1.12	
9945.00	91.19	90.96	7815.90	4.00	2385.13	2385.13	0.40	-0.28	-0.28	
9977.00	91.54	91.13	7815.14	3.42	2417.12	2417.12	1.22	1.09	0.53	
10009.00	91.98	91.22	7814.16	2.76	2449.09	2449.09	1.40	1.37	0.28	
10041.00	91.80	91.13	7813.10	2.10	2481.07	2481.07	0.63	-0.56	-0.28	
10073.00	91.71	91.22	7812.12	1.45	2513.05	2513.05	0.40	-0.28	0.28	
10105.00	91.71	91.13	7811.17	0.79	2545.03	2545.03	0.28	0.00	-0.28	
10137.00	91.89	91.22	7810.16	0.14	2577.00	2577.00	0.63	0.56	0.28	
10192.00	91.89	91.22	7808.35	-1.03	2631.96	2631.96	0.00	0.00	0.00	

POGO Producing Company

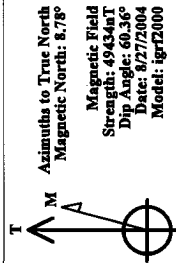
Harroun "15" #15-H
Eddy County, New Mexico
Plan #2 082904
Rig: Patterson #78

PATHFINDER
ENERGY SERVICES

SITE DETAILS

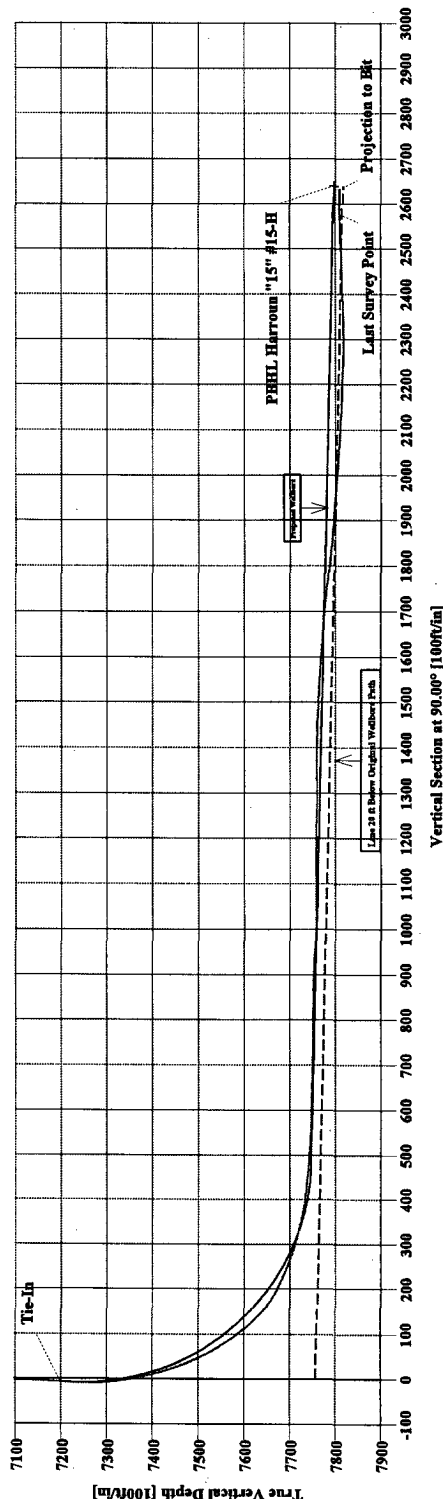
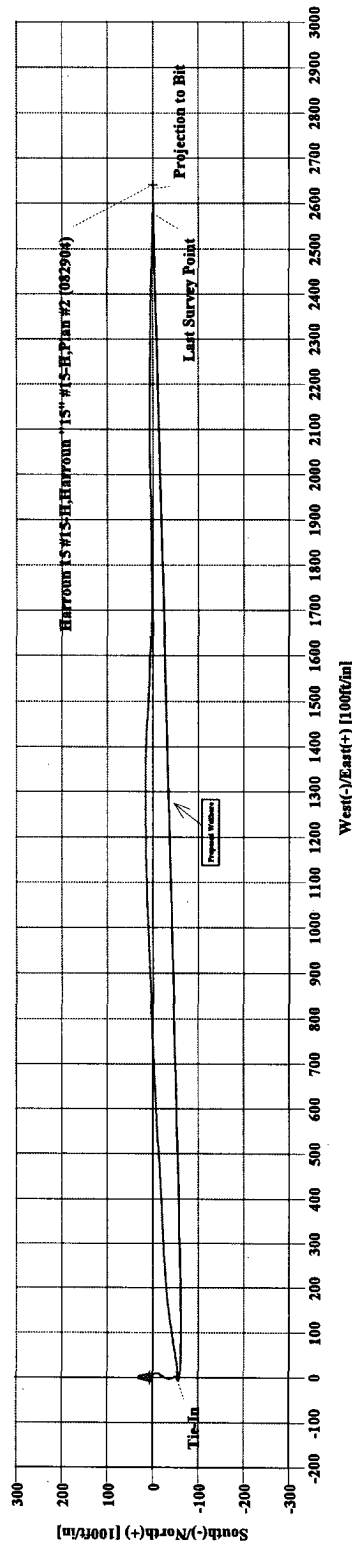
Harroun "15" #15-H
Section 15, T24S & R29E
Eddy County, New Mexico
Site Centre Latitude: 32°13'09.520N
Longitude: 103°58'37.980W

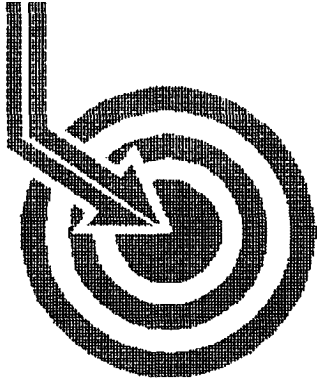
Ground Level: 2928.00
Positional Uncertainty: 0.00
Convergence: 0.19



SHL = 1980' FNL & 990' FWL
Section 15, T-24-S & R-29-E

PHHL = 1980' FNL & 1650' FEL
Section 15, T-24-S & R-29-E





Scientific Drilling

POGO

Field: Harroun
Site: Eddy County, NM
Well: Harroun 15W #15
Wellpath: VH - Job #32K0804518
Survey: 08/27/04

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ODD-ARTESIA

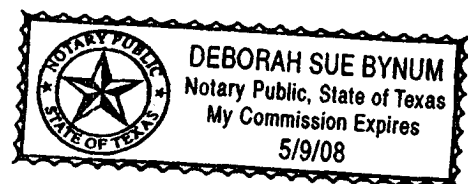
This survey is correct to the best of my knowledge
and is supported by actual field data.

Scott Nandy.....Company Representative

Notorized this date 17th of October, 2004.

Deborah Sue Bynum

Notary Signature
County of Midland
State of Texas





Scientific Drilling International

Survey Report

Company: POGO **Date:** 10/17/2004 **Time:** 09:30:42 **Page:** 1
Field: Harroun **Co-ordinate(NE) Reference:** Site: Eddy County, NM, Grid North
Site: Eddy County, NM **Vertical (TVD) Reference:** SITE 0.0
Well: Harroun 15W #15 **Section (VS) Reference:** Well (0.00N,0.00E,194.43Azi)
Wellpath: VH - Job #32K0804518 **Survey Calculation Method:** Minimum Curvature **Db:** Sybase

Survey: 08/27/04 **Start Date:** 8/27/2004
Company: Scientific Drilling Internatio **Engineer:** Gonzales/Foster/Rowe
Tool: Keeper, Keeper Gyro **Tied-to:** From Surface

Survey

MD ft	Incl deg	Azim deg	TVD ft	VS ft	N/S ft	E/W ft	DLS deg/100ft	ClsD ft	ClsA deg
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.0	0.00
100.0	0.19	54.04	100.0	-0.1	0.1	0.1	0.19	0.2	54.04
200.0	0.19	31.65	200.0	-0.4	0.3	0.4	0.07	0.5	46.62
300.0	0.32	78.64	300.0	-0.7	0.5	0.7	0.24	0.9	53.39
400.0	0.34	68.93	400.0	-1.0	0.7	1.3	0.06	1.4	61.30
500.0	0.50	43.15	500.0	-1.5	1.1	1.8	0.24	2.2	58.73
600.0	0.50	53.10	600.0	-2.3	1.7	2.5	0.09	3.0	55.69
700.0	0.37	42.62	700.0	-2.9	2.2	3.1	0.15	3.8	54.28
800.0	0.40	36.02	800.0	-3.5	2.7	3.5	0.05	4.4	52.01
900.0	0.32	41.35	900.0	-4.1	3.2	3.9	0.09	5.0	50.33
1000.0	0.18	48.28	1000.0	-4.5	3.5	4.2	0.14	5.5	49.81
1100.0	0.39	24.25	1100.0	-4.9	3.9	4.4	0.24	5.9	48.35
1200.0	0.42	356.36	1200.0	-5.6	4.6	4.5	0.20	6.5	44.56
1300.0	0.43	343.82	1300.0	-6.3	5.3	4.4	0.09	6.9	39.59
1400.0	0.58	347.17	1400.0	-7.0	6.2	4.2	0.15	7.5	34.14
1500.0	0.47	301.59	1500.0	-7.6	6.9	3.7	0.42	7.9	28.44
1600.0	1.16	245.98	1600.0	-7.1	6.7	2.5	0.97	7.1	20.18
1700.0	1.40	245.99	1699.9	-5.7	5.8	0.4	0.24	5.8	4.19
1800.0	1.29	251.41	1799.9	-4.3	4.9	-1.8	0.17	5.2	340.42
1900.0	1.12	252.26	1899.9	-3.2	4.3	-3.8	0.17	5.7	318.77
2000.0	0.88	253.94	1999.9	-2.3	3.8	-5.4	0.24	6.6	304.83
2100.0	0.75	258.14	2099.9	-1.6	3.4	-6.8	0.14	7.6	296.74
2200.0	0.19	88.25	2199.9	-1.4	3.3	-7.3	0.94	8.0	294.38
2300.0	1.41	101.01	2299.8	-1.5	3.1	-5.9	1.23	6.7	297.46
2400.0	1.45	102.16	2399.8	-1.6	2.6	-3.5	0.05	4.3	306.58
2500.0	2.06	114.96	2499.8	-1.3	1.5	-0.6	0.72	1.7	338.96
2600.0	2.24	124.55	2599.7	-0.3	-0.3	2.6	0.40	2.7	97.00
2700.0	2.34	132.06	2699.6	1.3	-2.8	5.8	0.32	6.4	115.89
2800.0	1.43	145.25	2799.6	3.0	-5.2	8.0	1.00	9.5	123.00
2900.0	1.07	156.07	2899.5	4.6	-7.1	9.1	0.43	11.5	127.89
3000.0	0.58	181.70	2999.5	5.8	-8.4	9.5	0.60	12.7	131.74
3100.0	0.75	183.40	3099.5	6.9	-9.6	9.4	0.17	13.4	135.58
3200.0	0.79	181.18	3199.5	8.3	-10.9	9.3	0.05	14.4	139.48
3300.0	0.72	196.46	3299.5	9.6	-12.2	9.2	0.21	15.3	143.18
3400.0	0.66	191.98	3399.5	10.8	-13.4	8.9	0.08	16.1	146.52
3500.0	0.58	206.25	3499.5	11.8	-14.4	8.5	0.17	16.7	149.43
3600.0	0.43	224.45	3599.5	12.7	-15.1	8.0	0.22	17.1	152.06
3700.0	0.46	228.69	3699.5	13.3	-15.7	7.5	0.04	17.3	154.53
3800.0	0.40	207.60	3799.5	14.0	-16.2	7.0	0.17	17.7	156.69
3900.0	0.34	225.08	3899.5	14.6	-16.8	6.6	0.13	18.0	158.43
4000.0	0.42	231.61	3999.5	15.1	-17.2	6.1	0.09	18.3	160.38
4100.0	0.48	224.04	4099.5	15.8	-17.7	5.5	0.08	18.6	162.61
4200.0	0.43	216.78	4199.5	16.5	-18.3	5.0	0.08	19.0	164.64
4300.0	0.65	223.85	4299.5	17.3	-19.0	4.4	0.23	19.5	166.94
4400.0	0.62	204.73	4399.5	18.4	-19.9	3.8	0.21	20.3	169.22
4500.0	0.65	216.68	4499.5	19.4	-20.9	3.2	0.14	21.1	171.20
4600.0	0.68	205.89	4599.4	20.5	-21.9	2.6	0.13	22.0	173.13
4700.0	0.67	206.46	4699.4	21.7	-22.9	2.1	0.01	23.0	174.73
4800.0	0.76	203.13	4799.4	22.9	-24.1	1.6	0.10	24.1	176.21



Scientific Drilling International

Survey Report

Company: POGO
Field: Harroun
Site: Eddy County, NM
Well: Harroun 15W #15
Wellpath: VH - Job #32K0804518

Date: 10/17/2004 Time: 09:30:42 Page: 2
Co-ordinate(NE) Reference: Site: Eddy County, NM, Grid North
Vertical (TVD) Reference: SITE 0.0
Section (VS) Reference: Well (0.00N,0.00E,194.43Azi)
Survey Calculation Method: Minimum Curvature Db: Sybase

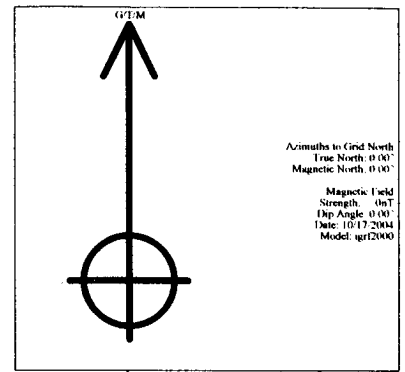
Survey

MD ft	Incl deg	Azim deg	TVD ft	VS ft	N/S ft	E/W ft	DLS deg/100ft	ClsD ft	ClsA deg
4900.0	0.80	205.07	4899.4	24.2	-25.3	1.0	0.05	25.3	177.65
5000.0	0.84	217.35	4999.4	25.6	-26.5	0.3	0.18	26.5	179.36
5100.0	0.81	197.45	5099.4	27.0	-27.8	-0.4	0.29	27.8	180.74
5200.0	0.81	208.90	5199.4	28.4	-29.1	-0.9	0.16	29.1	181.80
5300.0	0.67	211.05	5299.4	29.6	-30.2	-1.6	0.14	30.2	182.95
5400.0	0.72	201.28	5399.4	30.8	-31.3	-2.1	0.13	31.3	183.82
5500.0	0.71	210.16	5499.4	32.0	-32.4	-2.6	0.11	32.5	184.63
5600.0	0.55	209.93	5599.4	33.1	-33.3	-3.2	0.16	33.5	185.44
5700.0	0.64	199.85	5699.4	34.1	-34.3	-3.6	0.14	34.5	186.00
5800.0	0.63	209.78	5799.4	35.2	-35.3	-4.1	0.11	35.5	186.58
5900.0	0.60	174.92	5899.3	36.2	-36.3	-4.3	0.37	36.5	186.75
6000.0	0.67	173.36	5999.3	37.3	-37.4	-4.2	0.07	37.6	186.38
6100.0	0.68	164.82	6099.3	38.3	-38.5	-4.0	0.10	38.7	185.86
6200.0	0.70	164.01	6199.3	39.4	-39.7	-3.6	0.02	39.9	185.23
6300.0	0.82	158.30	6299.3	40.5	-41.0	-3.2	0.14	41.1	184.47
6400.0	0.98	155.49	6399.3	41.7	-42.4	-2.6	0.17	42.5	183.49
6500.0	1.12	155.92	6499.3	43.1	-44.1	-1.8	0.14	44.1	182.38
6600.0	1.18	151.89	6599.3	44.7	-45.9	-0.9	0.10	45.9	181.18
6700.0	1.31	145.32	6699.2	46.2	-47.7	0.2	0.19	47.7	179.77
6800.0	1.16	153.71	6799.2	47.7	-49.6	1.3	0.23	49.6	178.51
6900.0	0.63	179.70	6899.2	49.0	-51.0	1.7	0.65	51.1	178.05
7000.0	1.16	236.96	6999.2	50.3	-52.1	0.9	0.98	52.1	179.02
7100.0	2.74	240.89	7099.1	52.6	-53.8	-2.0	1.58	53.9	182.17
7200.0	3.21	239.95	7199.0	56.3	-56.4	-6.6	0.47	56.8	186.63
7300.0	3.16	245.05	7298.8	60.0	-59.0	-11.5	0.29	60.1	191.01
7400.0	2.46	237.05	7398.7	63.3	-61.3	-15.8	0.80	63.3	194.43

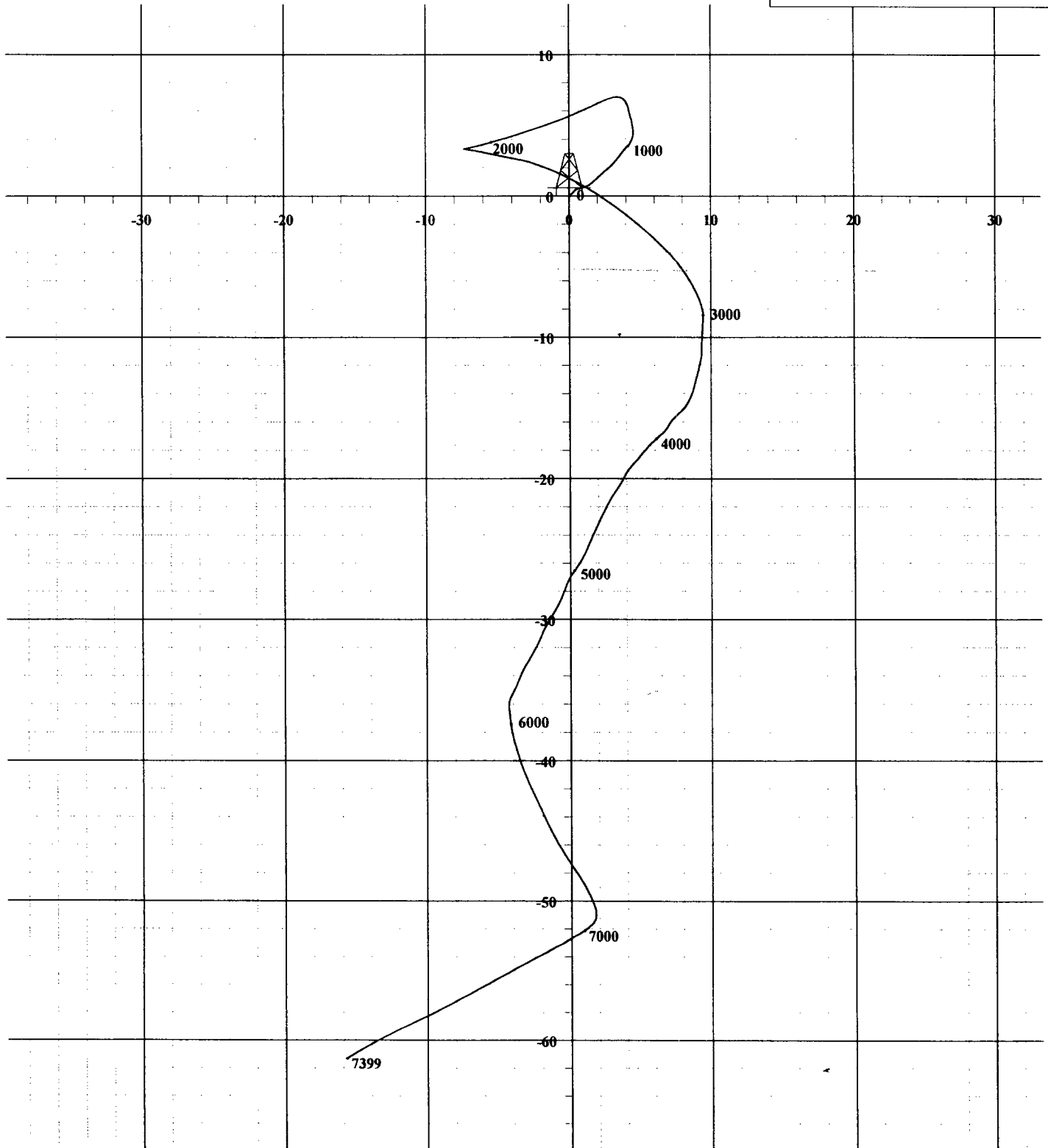


Scientific
Drilling

Field: Harroun
Site: Eddy County, NM
Well: Harroun 15W #15
Wellpath: VH - Job #32K0804518
Survey: 08/27/04



South(-)/North(+) [10ft/in]



West(-)/East(+) [10ft/in]