

Results of Directional Survey

API number:	30-025-36328	Operator:	YATES PETROLEUM CORP
OGRID:		Property:	PAWN AWP STATE

surface	ULSTR:	M	14	T 20S	R 32E
			330	FSL	1150 FWL
BH Loc	ULSTR:	P	14	T 20S	R 32E
			669	FSL	3963 FWL

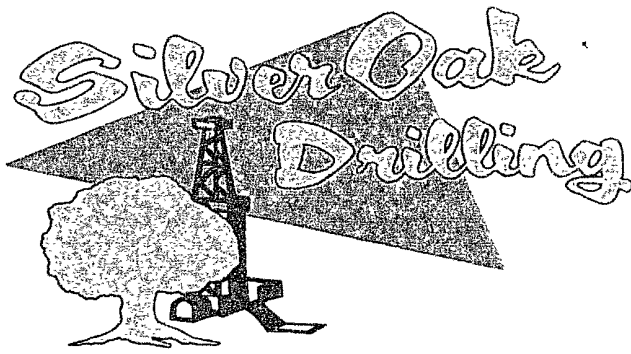
	MD	N/S	E/W	VD
	5425	54.26	563.86	5089.75
TOP PERFS/OH	5450	59.87	588.12	5092.01
	5457	61.44	594.91	5092.64
	7582	327.73	2697.99	5081.74
BOT PERFS/OH	7620	331.37	2735.81	5082.18
	7652	334.44	2767.66	5082.55

NEXT TO LAST	7582	327.73	2697.99	5081.74
LAST READING	7652	334.44	2767.66	5082.55
TD	7698	338.85	2813.44	5083.08

Surface Location	330	FS	1150	FW
Projected BHL	669	FS	3963	FW
Location of				
Top Perfs/OH	390	FS	1738	FW
Bottom Perfs/OH	661	FS	3886	FW

SUMMARY of Subsurface Locations

Surface Location	M-14-20S-32E	330	FS	1150	FW	Vert. Depth
Top Perfs/OH	N-14-20S-32E	390	FS	1738	FW	5092.01
Bottom Perfs/OH	O-14-20S-32E	661	FS	3886	FW	5082.18
Projected TD	P-14-20S-32E	669	FS	3963	FW	5083.08



Artesia, NM 88211-1370
(505) 748-1288

May 28, 2008

Yates Petroleum Corporation
105 S. 4th
Artesia, NM 88211-1395

SUR: M-14-20s-32e, 330/S & 1150/W
BHL: P-14-20s-32e, 669/S & 3963/W
API # 30-025-38818

RE: Belco AIA Federal #4H
330' FSL & 1150' FWL
Sec. 14, T20S, R32E
Lea County, New Mexico

Dear Sir,

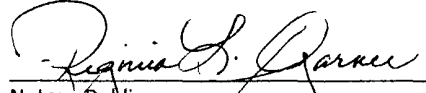
See the attached list for the Deviation Survey for the above captioned well.

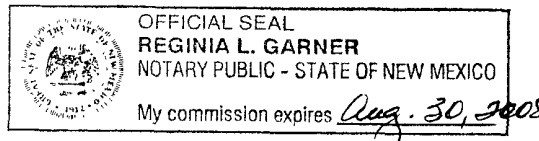
Very truly yours,


Leroy Curry
Drilling Superintendent

State of New Mexico }
County of Eddy }

The foregoing was acknowledged before me this 28th day of May, 2008.


Notary Public



Date	Depth	Dev/Inc	Dir/AZ	TVD	Date	Depth	Dev/Inc	Dir/AZ	TVD
04/06/2008	218.00	0.75	0.00	0.00	04/23/2008	5106.00	60.67	87.26	0.00
04/06/2008	433.00	0.25	0.00	473.00	04/23/2008	5138.00	65.51	86.01	0.00
04/07/2008	679.00	0.50	0.00	0.00	04/23/2008	5170.00	68.50	85.89	0.00
04/07/2008	993.00	0.75	0.00	0.00	04/23/2008	5201.00	71.05	85.97	0.00
04/08/2008	1179.00	1.50	0.00	1219.00	04/23/2008	5234.00	74.22	83.19	0.00
04/10/2008	1256.00	0.26	111.36	0.00	04/25/2008	5265.00	76.80	79.43	0.00
04/10/2008	1286.00	0.35	66.63	1350.00	04/25/2008	5295.00	78.79	79.14	0.00
04/10/2008	1348.00	0.53	92.56	1413.00	04/25/2008	5328.00	80.99	79.40	5083.00
04/10/2008	1411.00	0.79	81.48	1475.00	04/25/2008	5360.00	86.09	78.39	5086.00
04/10/2008	1473.00	0.62	81.75	1537.00	04/25/2008	5392.00	89.25	78.60	5087.95
04/10/2008	1598.00	0.97	81.83	1630.00	04/25/2008	5422.00	92.15	80.05	5087.56
04/10/2008	1629.00	1.06	79.32	1693.00	04/25/2008	5455.00	91.45	80.60	5086.89
04/10/2008	1660.00	1.06	79.28	1724.00	04/25/2008	5486.00	90.48	83.73	5086.06
04/10/2008	1722.00	1.41	74.21	0.00	04/25/2008	5518.00	90.92	84.10	5085.67
04/10/2008	1784.00	1.23	71.37	0.00	04/25/2008	5550.00	90.84	84.15	5085.18
04/10/2008	1847.00	0.97	76.47	0.00	04/25/2008	5581.00	89.52	82.56	5085.08
04/11/2008	1971.00	1.06	56.26	0.00	04/25/2008	5613.00	88.11	81.22	5085.75
04/11/2008	2034.00	0.88	64.43	0.00	04/25/2008	5644.00	87.76	88.81	5086.86
04/11/2008	2096.00	0.79	64.36	0.00	04/25/2008	5676.00	87.49	83.46	5088.19
04/11/2008	2158.00	0.79	109.61	0.00	04/25/2008	5707.00	88.04	83.34	5089.40
04/11/2008	2220.00	1.14	109.69	0.00	04/25/2008	5739.00	91.45	84.68	5089.54
04/11/2008	2283.00	1.76	106.10	2347.00	04/25/2008	5770.00	92.68	85.93	5088.39
04/11/2008	2345.00	1.58	104.77	2409.00	04/25/2008	5802.00	92.77	85.93	5088.39
04/11/2008	2407.00	1.14	93.17	2471.00	04/25/2008	5834.00	92.24	85.22	5085.52
04/11/2008	2469.00	0.35	36.48	2533.00	04/25/2008	5865.00	90.75	85.02	5084.68
04/11/2008	2532.00	0.62	359.30	2596.00	04/26/2008	5897.00	90.92	85.02	5084.23
04/11/2008	2594.00	0.97	335.57	0.00	04/26/2008	5928.00	89.16	83.35	5084.21
04/11/2008	2656.00	0.88	356.67	0.00	04/26/2008	5960.00	89.25	83.25	5084.65
04/11/2008	2719.00	0.18	0.45	0.00	04/26/2008	5992.00	89.60	83.39	5084.96
04/11/2008	2782.00	0.26	99.41	0.00	04/26/2008	6024.00	91.19	84.82	5084.74
04/12/2008	2844.00	0.53	92.03	0.00	04/26/2008	6056.00	90.40	84.56	5084.40
04/12/2008	2907.00	0.53	120.51	0.00	04/26/2008	6087.00	89.87	84.14	5084.82
04/12/2008	2969.00	0.53	85.61	0.00	04/26/2008	6119.00	89.69	84.18	5084.79
04/13/2008	3095.00	0.44	128.50	0.00	04/26/2008	6151.00	89.43	83.90	5084.79
04/13/2008	3157.00	0.18	282.58	0.00	04/26/2008	6182.00	89.16	84.06	5085.17
04/13/2008	3220.00	0.18	0.00	3284.00	04/26/2008	6213.00	89.25	83.94	5085.62
04/13/2008	3314.00	0.53	305.78	0.00	04/26/2008	6243.00	89.34	83.56	5085.98
04/13/2008	3386.00	0.35	312.46	0.00	04/26/2008	6275.00	88.55	82.89	5086.56
04/16/2008	3465.00	0.97	308.73	0.00	04/27/2008	6402.00	92.33	85.62	5085.00
04/16/2008	3527.00	0.53	314.14	0.00	04/27/2008	6464.00	92.51	86.10	5082.55
04/16/2008	3558.00	0.13	69.36	0.00	04/28/2008	6528.00	93.30	86.80	5079.30
04/16/2008	3714.00	0.35	348.60	0.00	04/28/2008	6559.00	94.97	85.81	5072.16
04/16/2008	3808.00	0.70	13.31	0.00	04/28/2008	6592.00	92.68	83.92	5074.93
04/16/2008	3901.00	0.79	358.18	0.00	04/29/2008	6623.00	91.10	83.39	5073.88
04/16/2008	3995.00	0.79	13.39	0.00	04/29/2008	6654.00	90.92	82.48	5073.33
04/16/2008	4088.00	1.58	287.77	0.00	05/05/2008	5393.00	85.82	77.46	5088.17
04/17/2008	4182.00	1.49	271.21	0.00	05/05/2008	5425.00	84.5	76.81	5090.53
04/17/2008	4275.00	0.09	94.05	0.00	05/05/2008	5457.00	82.75	80.96	5094.08
04/17/2008	4369.00	0.44	91.50	0.00	05/05/2008	5457.00	85.12	77.16	0.00
04/17/2008	4461.00	0.44	77.80	0.00	05/05/2008	5489.00	84.77	76.90	5096.24
04/17/2008	4523.00	0.18	186.31	0.00	05/05/2008	5519.00	85.30	76.96	5099.00
04/17/2008	4555.00	0.53	102.71	0.00	05/05/2008	5551.00	86.35	76.96	5101.33
04/18/2008	4586.00	0.97	94.46	0.00	05/05/2008	5583.00	88.20	76.85	5102.00
04/18/2008	4617.00	4.13	90.99	0.00	05/05/2008	5615.00	88.90	76.20	5103.66
04/18/2008	4648.00	7.83	92.62	0.00	05/05/2008	5646.00	89.34	76.23	5104.14
04/18/2008	4676.00	10.99	95.53	0.00	05/06/2008	5677.00	90.04	77.56	5104.31
04/21/2008	4760.00	21.46	96.02	0.00	05/06/2008	5710.00	90.92	77.87	5104.00
04/21/2008	4792.00	21.46	98.04	0.00	05/06/2008	5741.00	90.57	77.35	5103.63
04/21/2008	4823.00	28.14	98.16	0.00	05/06/2008	5772.00	90.48	77.42	5102.53
04/21/2008	4855.00	30.78	93.22	0.00	05/06/2008	5804.00	90.66	78.13	5102.22
04/21/2008	4885.00	34.47	91.24	0.00	05/06/2008	5835.00	91.01	78.68	5101.76
04/22/2008	4916.00	38.78	89.77	0.00	05/06/2008	5868.00	90.92	78.85	5101.23
04/22/2008	4948.00	42.30	89.44	0.00	05/06/2008	5898.00	90.57	78.46	5100.00
04/22/2008	4980.00	45.37	87.19	0.00	05/06/2008	5930.00	90.31	77.97	5100.58
04/22/2008	5012.00	48.28	87.42	0.00	05/06/2008	5960.00	90.40	78.80	5100.39
04/22/2008	5043.00	51.79	86.90	0.00	05/07/2008	5992.00	90.92	79.33	5100.02
04/23/2008	5074.00	56.10	86.80	0.00	05/07/2008	6024.00	92.24	81.02	5099.14

Date	Depth	Dev/Inc	Dir/AZ	TVD
05/07/2008	6055.00	92.86	81.59	5097.76
05/07/2008	6087.00	92.42	80.52	5096.29
05/07/2008	6119.00	91.80	79.80	5094.97
05/07/2008	6151.00	91.89	80.18	5093.98
05/07/2008	6182.00	91.45	81.81	5093.04
05/07/2008	6213.00	91.10	81.95	5092.35
05/09/2008	6243.00	90.57	81.72	5091.92
05/09/2008	6279.00	88.55	81.94	5092.18
05/09/2008	6308.00	89.25	82.46	5092.77
05/09/2008	6338.00	90.22	83.60	5092.91
05/09/2008	6370.00	90.40	83.92	5092.74
05/10/2008	6402.00	90.13	84.52	5092.59
05/10/2008	6433.00	90.34	85.23	5092.46
05/10/2008	6465.00	90.92	86.17	5092.11
05/10/2008	6496.00	92.60	87.01	5091.10
05/10/2008	6527.00	93.74	87.72	5089.56
05/10/2008	6559.00	93.83	87.76	5087.45
05/10/2008	6621.00	92.51	87.55	5083.83
05/10/2008	6684.00	92.51	87.24	5081.07
05/10/2008	6747.00	91.98	86.24	5078.60
05/11/2008	6810.00	92.15	85.96	5076.33
05/11/2008	6873.00	91.28	85.32	5074.45
05/11/2008	6904.00	90.48	84.46	5073.00
05/11/2008	6936.00	89.10	84.30	5074.09
05/12/2008	6948.00	88.81	83.80	5074.31
05/12/2008	6979.00	88.72	83.39	5075.17
05/12/2008	7010.00	87.76	83.64	5076.12
05/14/2008	7047.00	87.05	84.17	5077.61
05/14/2008	7079.00	87.05	83.88	5079.34
05/14/2008	7109.00	83.87	87.40	5081.00
05/14/2008	7141.00	85.00	88.70	5082.00
05/14/2008	7172.00	85.00	89.40	5082.50
05/15/2008	7204.00	88.90	85.29	5082.97
05/15/2008	7235.00	89.08	84.88	5083.52
05/15/2008	7267.00	89.34	84.74	5083.96
05/15/2008	7330.00	90.04	85.21	5084.08
05/15/2008	7393.00	90.48	85.35	5083.80
05/15/2008	7457.00	90.92	85.37	5083.00
05/15/2008	7519.00	91.00	85.47	5082.00
05/16/2008	7551.00	89.96	84.95	5081.77
05/16/2008	7582.00	90.13	85.05	5081.75
05/16/2008	7652.00	88.55	83.95	5082.74

EOF

SUR: M-14-20s-32e, 330/S & 1150/W
BHL: P-14-20s-32e, 669/S & 3963/W
API # 30-025-38818

DIRECTIONAL SURVEY REPORT

YATES PETROLEUM

BELCO AIA FEDERAL #4H

LEA COUNTY, NEW MEXICO

PREPARED BY: FRANCISCO SINISTERRA

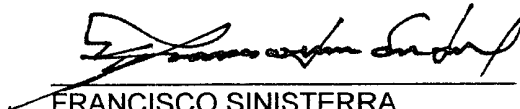


DIRECTIONAL SURVEY COMPANY REPORT:

1. NAME OF SURVEYING COMPANY: PATHFINDER ENERGY SERVICES
2. NAME OF PERSON(S) PERFORMING SURVEY:
A) JEFF FAULKNER
3. POSITION OF SAID PERSON(S): (A-F) SURVEYORS (FIELD ENGINEERS)
4. DATE(S) ON WHICH SURVEY WAS PERFORMED: 4/10/08 TO 5/17/08
5. STATE IN WHICH SURVEY WAS PERFORMED: NEW MEXICO
6. LOCATION OF WELL: LEA COUNTY, NM
7. TYPE OF SURVEY(S) PERFORMED: MWD
8. COMPLETE IDENTIFICATION OF WELL:

YATES PETROLEUM
BELCO AIA FEDERAL #4H
LEA COUNTY, NM
RIG: SILVER OAK #6
9. SURVEY CERTIFIED FROM: 1256 TO 7652 FEET MEASURED DEPTH.

THIS IS TO VERIFY THAT ATTACHED DOCUMENTS SHOWING THE WELL TO BE DISPLACED AT 2832.77 FEET ON A BEARING OF 83.12 DEGREES FROM THE CENTER OF THE ROTARY TABLE AT A PROJECTED BIT DEPTH OF 7697 FEET, ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE.


FRANCISCO SINISTERRA
M/LWD SERVICE COORDINATOR

PathFinder Energy Services, Inc.

BHL Report

Page 01/01
Tie-in Date: 04/10/2008
Date Completed: 05/18/2008

YATES PETROLEUM
BELCO AIA FEDERAL #4H
LEA COUNTY, NM
Rig:SILVER OAK #6
PathFinder Office Supervisor: FRANCISCO SINISTERRA
PathFinder Field Engineers:J.M. FAULKNER

Survey Horiz. Reference:WELLHEAD
Ref Coordinates: LAT:32.34.0.6219 N LON:103.44.30.2178 W
GRID Reference:NAD83 new mexico east Transverse Mercator
Ref GRID Coord: X: 723592.5130 Y: 570453.3600
North Aligned To:GRID NORTH
Total Magnetic Correction:10.72° EAST TO GRID
Vertical Section Plane: 84.76
Survey Vert. Reference: 30.00' Kelly Bushing To Ground
Altitude:3500.00' Ground To MSL

Measured Depth	7697.00	(feet)
Inclination	88.55	(deg)
Azimuth	83.95	(deg)
True Vertical Depth	5083.69	(feet)
Vertical Section	2831.61	(feet)
Survey X cord	726404.90	(feet)
Survey Y cord	570792.54	(feet)
Survey Lat	32.56772838 N	(deg)
Survey Lon	103.73259226 W	(deg)
Rectangular Corr. N/S	339.18 N	(feet)
Rectangular Corr. E/W	2812.39 E	(feet)
Closure Distance	2832.77	(feet)
Direction of Closure	83.12	(deg)
Dogleg Severity	0.01	(deg/100ft)

PathFinder Energy Services, Inc.

Survey Report

YATES PETROLEUM
 BELCO AIA FEDERAL #4H
 LEA COUNTY, NM
 Rig:SILVER OAK #6
 PathFinder Office Supervisor: FRANCISCO SINISTERRA
 PathFinder Field Engineers: J.M. FAULKNER

Survey Horiz. Reference:WELLHEAD
 Ref Coordinates: LAT:32.34.0.6219 N LON:103.44.30.2178 W
 Reference:NAD83 new mexico east Transverse Mercator
 Ref GRID Coor: X: 723592.5130 Y: 570453.3600
 North Aligned To:GRID NORTH
 Total Magnetic Correction:10.72° EAST TO GRID
 Vertical Section Plane: 84.76
 Survey Vert. Reference: 30.00' Kelly Bushing To Ground
 Altitude:3500.00' Ground To MSL

Survey Calculations by PathCalc v1.97 using Minimum Curvature

Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets (ft) (ft)		Closure Dist Dir (ft) (deg)	DLS (dg/100ft)	
ORIGIN OF WELL AT SURFACE.										
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00@ 0.00	0.00	
THE FOLLOWING ARE GYRODATA DIRECTIONAL SURVEYS.										
100.00	0.46	308.87	100.00	100.00	-0.29	0.25 N	0.31 W	0.40@ 308.87	0.46	
200.00	0.42	304.90	200.00	100.00	-0.86	0.71 N	0.93 W	1.17@ 307.63	0.05	
300.00	0.41	304.95	299.99	100.00	-1.41	1.13 N	1.52 W	1.89@ 306.59	0.01	
400.00	0.42	298.27	399.99	100.00	-1.99	1.51 N	2.14 W	2.61@ 305.20	0.05	
500.00	0.34	293.37	499.99	100.00	-2.56	1.80 N	2.73 W	3.27@ 303.36	0.09	
600.00	0.29	283.27	599.99	100.00	-3.06	1.97 N	3.25 W	3.80@ 301.28	0.07	
700.00	0.30	295.46	699.99	100.00	-3.52	2.14 N	3.73 W	4.30@ 299.88	0.06	
800.00	0.36	292.72	799.98	100.00	-4.02	2.38 N	4.26 W	4.88@ 299.18	0.06	
900.00	0.46	284.06	899.98	100.00	-4.68	2.60 N	4.94 W	5.58@ 297.75	0.12	
1000.00	0.41	261.87	999.98	100.00	-5.42	2.64 N	5.68 W	6.27@ 294.96	0.17	
1100.00	0.37	279.50	1099.98	100.00	-6.09	2.65 N	6.35 W	6.88@ 292.62	0.13	
1200.00	0.08	69.50	1199.98	100.00	-6.33	2.72 N	6.61 W	7.15@ 292.41	0.44	
ORIGINAL WELLBORE TIED INTO GYRODATA DIRECTIONAL SURVEY @ 1220' MD.										
1220.00	0.11	103.13	1219.98	20.00	-6.30	2.73 N	6.57 W	7.12@ 292.51	0.31	
THE FOLLOWING ARE PATHFINDER MWD SURVEYS.										
1256.00	0.26	111.36	1255.98	36.00	-6.19	2.69 N	6.47 W	7.00@ 292.57	0.42	
1286.00	0.35	66.63	1285.98	30.00	-6.04	2.70 N	6.32 W	6.87@ 293.13	0.82	
1348.00	0.53	92.56	1347.97	62.00	-5.58	2.76 N	5.86 W	6.48@ 295.24	0.43	
1411.00	0.79	81.48	1410.97	63.00	-4.86	2.81 N	5.14 W	5.86@ 298.70	0.46	
1472.00	0.62	81.75	1471.96	61.00	-4.11	2.92 N	4.39 W	5.28@ 303.62	0.28	
1566.00	0.97	81.13	1565.96	94.00	-2.81	3.12 N	3.10 W	4.40@ 315.12	0.37	
1629.00	1.06	79.20	1628.95	63.00	-1.69	3.31 N	2.01 W	3.87@ 328.78	0.15	

PathFinder Energy Services, Inc.

Survey Report

YATES PETROLEUM
BELCO AIA FEDERAL #4H
LEA COUNTY, NM
RIG:SILVER OAK #6

Page 02/06

Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets (ft) (ft)		Closure Dist Dir (ft) (deg)		DLS (dg/100ft)
1660.00	1.06	79.28	1659.94	31.00	-1.12	3.42 N	1.44 W	3.71@	337.11	0.00
1722.00	1.41	74.71	1721.93	62.00	0.20	3.72 N	0.14 W	3.73@	357.80	0.59
1784.00	1.23	71.37	1783.91	62.00	1.60	4.14 N	1.22 E	4.32@	16.47	0.32
1847.00	0.97	76.47	1846.90	63.00	2.78	4.48 N	2.38 E	5.07@	28.01	0.44
1908.20	1.14	64.87	1908.09	61.20	3.87	4.86 N	3.44 E	5.95@	35.28	0.44
1971.00	1.06	56.26	1970.88	62.80	4.96	5.45 N	4.49 E	7.06@	39.48	0.29
2034.00	0.88	64.43	2033.87	63.00	5.93	5.98 N	5.41 E	8.06@	42.12	0.36
2096.00	0.79	64.34	2095.86	62.00	6.78	6.37 N	6.22 E	8.90@	44.33	0.15
2158.00	0.79	109.61	2157.85	62.00	7.57	6.41 N	7.01 E	9.50@	47.55	0.98
2220.00	1.14	109.69	2219.85	62.00	8.51	6.06 N	7.99 E	10.03@	52.83	0.56
2283.00	1.76	106.00	2282.83	63.00	9.98	5.58 N	9.51 E	11.03@	59.60	0.99
2345.00	1.58	104.77	2344.80	62.00	11.67	5.10 N	11.25 E	12.36@	65.62	0.30
2407.00	1.14	93.17	2406.78	62.00	13.09	4.85 N	12.70 E	13.59@	69.10	0.83
2469.00	0.35	36.48	2468.78	62.00	13.82	4.97 N	13.43 E	14.32@	69.69	1.60
2532.00	0.62	359.30	2531.77	63.00	13.98	5.46 N	13.54 E	14.60@	68.02	0.64
2594.00	0.97	335.57	2593.77	62.00	13.83	6.28 N	13.31 E	14.72@	64.76	0.76
2656.00	0.88	356.67	2655.76	62.00	13.68	7.23 N	13.07 E	14.94@	61.05	0.56
2719.00	0.18	0.45	2718.76	63.00	13.70	7.81 N	13.04 E	15.20@	59.08	1.11
2782.00	0.26	99.41	2781.76	63.00	13.85	7.89 N	13.18 E	15.36@	59.11	0.54
2844.00	0.53	92.03	2843.76	62.00	14.27	7.85 N	13.61 E	15.71@	60.01	0.44
2907.00	0.53	120.51	2906.75	63.00	14.80	7.70 N	14.15 E	16.11@	61.46	0.41
2969.00	0.53	85.61	2968.75	62.00	15.32	7.57 N	14.69 E	16.52@	62.72	0.51
3032.00	0.53	91.06	3031.75	63.00	15.90	7.59 N	15.27 E	17.05@	63.57	0.08
3095.00	0.44	128.59	3094.75	63.00	16.36	7.43 N	15.75 E	17.41@	64.73	0.51
3157.00	0.18	282.58	3156.75	62.00	16.44	7.31 N	15.84 E	17.44@	65.24	0.98
3220.00	0.18	193.45	3219.74	63.00	16.31	7.23 N	15.72 E	17.30@	65.30	0.40
3314.00	0.53	305.78	3313.74	94.00	15.94	7.34 N	15.33 E	17.00@	64.41	0.66

PathFinder Energy Services, Inc.

Survey Report

YATES PETROLEUM
BELCO AIA FEDERAL #4H
LEA COUNTY, NM
RIG:SILVER OAK #6

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Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets (ft) (ft)		Closure Dist Dir (ft) (deg)		DLS (dg/100ft)
3386.00	0.35	312.46	3385.74	72.00	15.54	7.68 N	14.90 E	16.76@	62.72	0.26
3465.00	0.97	308.73	3464.74	79.00	14.90	8.27 N	14.20 E	16.43@	59.80	0.79
3527.00	0.53	314.14	3526.73	62.00	14.33	8.79 N	13.58 E	16.18@	57.08	0.72
3589.00	0.44	296.48	3588.73	62.00	13.94	9.10 N	13.17 E	16.00@	55.35	0.28
3651.00	0.35	273.02	3650.73	62.00	13.55	9.22 N	12.76 E	15.74@	54.17	0.30
3714.00	0.35	348.62	3713.73	63.00	13.34	9.41 N	12.53 E	15.68@	53.09	0.68
3808.00	0.70	13.31	3807.72	94.00	13.49	10.25 N	12.61 E	16.25@	50.88	0.44
3901.00	0.79	358.03	3900.71	93.00	13.71	11.45 N	12.72 E	17.11@	48.01	0.23
3995.00	0.79	13.39	3994.71	94.00	13.95	12.73 N	12.85 E	18.08@	45.27	0.22
4088.00	1.58	287.77	4087.69	93.00	12.98	13.74 N	11.77 E	18.10@	40.59	1.84
4182.00	1.49	271.21	4181.66	94.00	10.57	14.16 N	9.32 E	16.95@	33.34	0.48
4275.00	0.09	94.05	4274.65	93.00	9.44	14.18 N	8.18 E	16.37@	29.98	1.70
4369.00	0.44	176.39	4368.65	94.00	9.50	13.82 N	8.28 E	16.11@	30.92	0.47
4461.00	0.44	77.80	4460.64	92.00	9.85	13.54 N	8.64 E	16.06@	32.56	0.73
4523.00	0.18	186.31	4522.64	62.00	10.06	13.49 N	8.87 E	16.15@	33.31	0.85
4555.00	0.53	102.71	4554.64	32.00	10.19	13.41 N	9.01 E	16.15@	33.88	1.69
4586.00	0.97	94.46	4585.64	31.00	10.59	13.36 N	9.41 E	16.34@	35.15	1.46
4617.00	4.13	90.99	4616.61	31.00	11.96	13.32 N	10.79 E	17.14@	39.00	10.20
4648.00	7.83	92.62	4647.43	31.00	15.16	13.20 N	14.01 E	19.25@	46.70	11.95
4676.00	10.99	95.53	4675.05	28.00	19.67	12.86 N	18.57 E	22.59@	55.31	11.41
4760.00	21.46	96.02	4755.59	84.00	42.67	10.47 N	41.89 E	43.18@	75.97	12.47
4792.00	24.97	98.05	4785.00	32.00	54.99	8.91 N	54.40 E	55.13@	80.70	11.25
4823.00	28.14	98.16	4812.72	31.00	68.47	6.95 N	68.12 E	68.48@	84.17	10.23
4855.00	30.78	93.22	4840.59	32.00	83.92	5.42 N	83.77 E	83.95@	86.30	11.21
4885.00	34.47	91.24	4865.85	30.00	99.95	4.81 N	99.93 E	100.04@	87.25	12.80
4916.00	38.78	89.77	4890.73	31.00	118.35	4.66 N	118.42 E	118.51@	87.75	14.19
4948.00	42.30	89.44	4915.04	32.00	139.07	4.80 N	139.21 E	139.30@	88.02	11.02

PathFinder Energy Services, Inc.

Survey Report

YATES PETROLEUM
BELCO AIA FEDERAL #4H
LEA COUNTY, NM
RIG: SILVER OAK #6

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Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets (ft) (ft)		Closure Dist Dir (ft) (deg)		DLS (dg/100ft)
4980.00	45.37	87.19	4938.12	32.00	161.18	5.47 N	161.36 E	161.45@	88.06	10.76
5011.00	48.28	87.42	4959.33	31.00	183.77	6.53 N	183.94 E	184.06@	87.97	9.40
5043.00	51.79	86.90	4979.88	32.00	208.27	7.75 N	208.43 E	208.58@	87.87	11.04
5075.00	56.10	86.82	4998.71	32.00	234.11	9.16 N	234.26 E	234.44@	87.76	13.47
5106.00	60.67	87.26	5014.96	31.00	260.49	10.52 N	260.61 E	260.83@	87.69	14.79
5138.00	65.51	86.01	5029.44	32.00	289.00	12.20 N	289.09 E	289.35@	87.58	15.52
5170.00	68.50	85.89	5041.94	32.00	318.44	14.29 N	318.47 E	318.79@	87.43	9.35
5202.00	71.05	85.97	5053.00	32.00	348.46	16.42 N	348.42 E	348.81@	87.30	7.97
5234.00	74.22	83.19	5062.55	32.00	379.00	19.31 N	378.82 E	379.31@	87.08	12.92
5265.00	75.80	80.51	5070.57	31.00	408.90	23.55 N	408.45 E	409.13@	86.70	9.78
5297.00	78.79	79.14	5077.61	32.00	439.99	29.07 N	439.18 E	440.14@	86.21	10.23
5328.00	80.99	79.40	5083.05	31.00	470.37	34.75 N	469.16 E	470.44@	85.76	7.14
5360.00	86.09	78.39	5086.65	32.00	501.99	40.87 N	500.35 E	502.02@	85.33	16.24
SIDETRACK TIED INTO PATHFINDER MWD SURVEY @ 5392' MD.										
5392.00	89.25	78.60	5087.95	32.00	533.77	47.25 N	531.68 E	533.77@	84.92	9.90
5425.00	84.50	76.81	5089.75	33.00	566.46	54.26 N	563.86 E	566.47@	84.50	15.38
5457.00	85.12	77.16	5092.64	32.00	598.04	61.44 N	594.91 E	598.08@	84.10	2.22
5489.00	84.77	76.90	5095.46	32.00	629.62	68.60 N	625.97 E	629.72@	83.75	1.36
5519.00	85.30	76.96	5098.06	30.00	659.23	75.35 N	655.09 E	659.41@	83.44	1.78
5551.00	86.35	76.96	5100.39	32.00	690.85	82.55 N	686.18 E	691.13@	83.14	3.28
5583.00	88.20	76.85	5101.91	32.00	722.51	89.80 N	717.31 E	722.91@	82.86	5.79
5615.00	88.90	76.20	5102.72	32.00	754.17	97.25 N	748.42 E	754.71@	82.60	2.98
5646.00	89.34	76.23	5103.19	31.00	784.82	104.64 N	778.52 E	785.52@	82.35	1.42
5677.00	90.04	77.56	5103.36	31.00	815.53	111.67 N	808.71 E	816.39@	82.14	4.85
5710.00	90.92	77.87	5103.08	33.00	848.28	118.69 N	840.96 E	849.29@	81.97	2.83
5741.00	90.57	77.35	5102.68	31.00	879.04	125.34 N	871.23 E	880.20@	81.81	2.02
5772.00	90.48	77.42	5102.40	31.00	909.78	132.11 N	901.48 E	911.11@	81.66	0.37

PathFinder Energy Services, Inc.

Survey Report

YATES PETROLEUM
BELCO AIA FEDERAL #4H
LEA COUNTY, NM
RIG:SILVER OAK #6

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Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets (ft) (ft)		Closure Dist (ft)	Dir (deg)	DLS (dg/100ft)
5804.00	90.66	78.13	5102.08	32.00	941.54	138.88 N	932.75 E	943.04@	81.53	2.29
5835.00	91.01	78.68	5101.63	31.00	972.35	145.11 N	963.12 E	973.99@	81.43	2.10
5867.00	90.92	78.85	5101.09	32.00	1004.17	151.35 N	994.50 E	1005.95@	81.35	0.60
5898.00	90.57	78.46	5100.69	31.00	1034.99	157.44 N	1024.89 E	1036.91@	81.27	1.69
5930.00	90.31	77.97	5100.44	32.00	1066.78	163.98 N	1056.22 E	1068.87@	81.18	1.73
5960.00	90.40	78.80	5100.25	30.00	1096.59	170.02 N	1085.60 E	1098.83@	81.10	2.78
5992.00	90.92	79.33	5099.88	32.00	1128.43	176.09 N	1117.02 E	1130.81@	81.04	2.32
6024.00	92.24	81.02	5099.00	32.00	1160.31	181.55 N	1148.53 E	1162.79@	81.02	6.70
6055.00	92.86	81.59	5097.62	31.00	1191.23	186.23 N	1179.15 E	1193.76@	81.03	2.72
6087.00	92.42	80.52	5096.15	32.00	1223.13	191.20 N	1210.72 E	1225.73@	81.03	3.61
6119.00	91.80	79.80	5094.97	32.00	1255.00	196.66 N	1242.23 E	1257.70@	81.00	2.97
6151.00	91.89	80.18	5093.94	32.00	1286.87	202.22 N	1273.73 E	1289.68@	80.98	1.22
6182.00	91.45	81.81	5093.04	31.00	1317.79	207.07 N	1304.33 E	1320.67@	80.98	5.44
6213.00	91.10	81.95	5092.35	31.00	1348.75	211.45 N	1335.01 E	1351.66@	81.00	1.22
6243.00	90.57	81.72	5091.91	30.00	1378.70	215.71 N	1364.71 E	1381.65@	81.02	1.93
6277.00	88.55	81.94	5092.17	34.00	1412.66	220.54 N	1398.36 E	1415.64@	81.04	5.98
6308.00	89.25	82.46	5092.77	31.00	1443.62	224.75 N	1429.07 E	1446.63@	81.06	2.81
6338.00	90.22	83.60	5092.91	30.00	1473.60	228.39 N	1458.84 E	1476.61@	81.10	4.99
6370.00	90.40	83.92	5092.73	32.00	1505.60	231.87 N	1490.65 E	1508.58@	81.16	1.15
6402.00	90.13	84.52	5092.58	32.00	1537.60	235.09 N	1522.49 E	1540.53@	81.22	2.06
6433.00	90.40	85.23	5092.44	31.00	1568.60	237.86 N	1553.36 E	1571.47@	81.29	2.45
6465.00	90.92	86.17	5092.07	32.00	1600.59	240.26 N	1585.27 E	1603.38@	81.38	3.36
6496.00	92.68	87.01	5091.10	31.00	1631.56	242.10 N	1616.20 E	1634.23@	81.48	6.29
6527.00	93.74	87.72	5089.36	31.00	1662.48	243.53 N	1647.12 E	1665.02@	81.59	4.11
6559.00	93.83	87.76	5087.25	32.00	1694.36	244.78 N	1679.02 E	1696.77@	81.71	0.31
6621.00	92.51	87.55	5083.82	62.00	1756.19	247.32 N	1740.88 E	1758.36@	81.91	2.16
6684.00	92.51	87.24	5081.06	63.00	1819.06	250.18 N	1803.75 E	1821.02@	82.10	0.49

PathFinder Energy Services, Inc.

Survey Report

YATES PETROLEUM
BELCO AIA FEDERAL #4H
LEA COUNTY, NM
RIG:SILVER OAK #6

Page 06/06

Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets (ft) (ft)		Closure Dist Dir (ft) (deg)		DLS (dg/100ft)
6747.00	91.98	86.24	5078.59	63.00	1881.97	253.76 N	1866.60 E	1883.77@	82.26	1.80
6810.00	92.15	85.96	5076.32	63.00	1944.92	258.04 N	1929.41 E	1946.59@	82.38	0.52
6873.00	91.28	85.32	5074.44	63.00	2007.88	262.83 N	1992.20 E	2009.46@	82.48	1.71
6904.00	90.48	84.46	5073.96	31.00	2038.87	265.59 N	2023.07 E	2040.43@	82.52	3.79
6936.00	89.08	84.28	5074.09	32.00	2070.87	268.73 N	2054.92 E	2072.41@	82.55	4.41
6948.00	88.81	83.80	5074.31	12.00	2082.87	269.97 N	2066.85 E	2084.41@	82.56	4.59
6979.00	88.72	83.39	5074.98	31.00	2113.86	273.43 N	2097.65 E	2115.40@	82.57	1.35
7010.00	87.76	83.64	5075.93	31.00	2144.83	276.93 N	2128.44 E	2146.38@	82.59	3.20
7047.00	87.05	84.17	5077.60	37.00	2181.79	280.85 N	2165.19 E	2183.33@	82.61	2.39
7079.00	87.05	83.88	5079.25	32.00	2213.75	284.18 N	2196.97 E	2215.28@	82.63	0.91
7109.00	87.41	83.87	5080.70	30.00	2243.71	287.38 N	2226.77 E	2245.24@	82.65	1.20
7141.00	88.72	84.95	5081.78	32.00	2275.69	290.49 N	2258.60 E	2277.20@	82.67	5.30
7172.00	89.43	84.96	5082.28	31.00	2306.68	293.22 N	2289.47 E	2308.17@	82.70	2.29
7204.00	88.90	85.29	5082.75	32.00	2338.68	295.94 N	2321.35 E	2340.14@	82.73	1.95
7235.00	89.08	84.88	5083.29	31.00	2369.67	298.59 N	2352.23 E	2371.11@	82.77	1.44
7267.00	89.34	84.74	5083.73	32.00	2401.67	301.49 N	2384.10 E	2403.09@	82.79	0.92
7330.00	90.04	85.21	5084.07	63.00	2464.67	307.01 N	2446.86 E	2466.04@	82.85	1.34
7393.00	90.48	85.35	5083.79	63.00	2527.66	312.19 N	2509.64 E	2528.98@	82.91	0.73
7457.00	90.92	85.37	5083.01	64.00	2591.66	317.37 N	2573.43 E	2592.92@	82.97	0.69
7519.00	90.92	85.42	5082.01	62.00	2653.64	322.34 N	2635.22 E	2654.86@	83.03	0.08
7551.00	89.96	84.95	5081.77	32.00	2685.64	325.03 N	2667.10 E	2686.84@	83.05	3.34
7582.00	90.13	85.05	5081.74	31.00	2716.64	327.73 N	2697.99 E	2717.82@	83.07	0.64
7652.00	88.55	83.95	5082.55	70.00	2786.63	334.44 N	2767.66 E	2787.79@	83.11	2.75
STRAIGHT LINE PROJECTION TO BIT @ 7697' MD.										
7697.00	88.55	83.95	5083.69	45.00	2831.61	339.18 N	2812.39 E	2832.77@	83.12	0.01

**ENERGY SERVICES****TIE-IN SURVEY INFORMATION SHEET****CLIENT INFORMATION**

CLIENT:	YATES PETROLEUM		
LEASE / WELL No.:	BELCO AIA FEDERAL #4H		
WELL LOCATION:	SALT LAKE DELAWARE		
COUNTY / STATE / COUNTRY:	LEA COUNTY	NM	USA
RIG:	SILVER OAK #6		
API WELL No:	30-025-38818		
JOB No:	101007321 WT-WT		
P.O. / AFE No.			
DIRECTIONAL COMPANY:	PATHFINDER ENERGY SERVICES		

WELL SITE INFORMATION

TOTAL MAGNETIC CORRECTION (TMC):			
On Wall Plat:	7.74	LWD Calculated:	7.74
X = 723592.513000		Y = 570453.360000	
Feet		Feet	
SITE LATITUDE:	32.566839 N	SITE LONGITUDE:	103.741727 W
GRID SYSTEM:	TRUE ☐ UTM ☐ LAMBERT ☒	ZONE:	NEW MEXICO EAST
PROPOSED DRIFT DIRECTION:	84.76		
KELLY BUSHING ELEVATION:	30		
ALTITUDE:	3500	Feet	WATER DEPTH:
			N/A
			Feet

TIE-IN SURVEY

MEASURED DEPTH:	1220'		
DRIFT ANGLE:	0.11		
DRIFT DIRECTION:	103.13		
TRUE VERTICAL DEPTH:	1219.98		
VERTICAL SECTION:	2.7		
RECTANGULAR COORDINATE (N / S) :	2.73 N		
RECTANGULAR COORDINATE (E / W) :	6.57 W		
CLOSURE DISTANCE / DIRECTION:	7.1	292.6	
SURVEY CALCULATION METHOD:	AA ☐	MC ☒	RC ☐ BT ☐
SOURCE OF TIE-IN DATA (COMPANY):	GYRODATA		
COPY OF TIE-IN SURVEY REPORT	☒ YES ☐ NO		

WELL PLAN

KICKOFF DEPTH:	4596.54	TOTAL DEPTH:	8678.02
KICKOFF ANGLE:	12	MAX ANGLE:	90

PES Engineers: J.M. FAULKNER

**Signature of both field engineers required if applicable

Directional Driller: _____

DATE: 4-Apr-2008

A Gyrodata Directional Survey

Field Copy Only, not definitive

for

YATES PETROLEUM

Location: SILVER OAK #6, LEA COUNTY, NEW MEXICO
Lease: BELCO AIA FED Well: #4H, 4 1/2 XO DRILLPIPE

Job Number: MD0408G_189

Run Date: 4/16/2008 9:02:35 PM

Surveyor: STEVE WINTHER

Calculation Method: MINIMUM CURVATURE

Survey Latitude: 32.566694 deg. N Longitude: 103.741222 deg. W

Azimuth Correction:

Gyro: -0.32000 deg West to Grid North

Vertical Section Calculated from Well Head Location

Closure Calculated from Well Head Location

Horizontal Coordinates Calculated from Well Head Location

A Gyrodata Directional Survey

YATES PETROLEUM

Location: SILVER OAK #6, LEA COUNTY, NEW MEXICO

Lease: BELCO AIA FED Well: #4H, 4 1/2 XO DRILLPIPE

Job Number: MD0408G_189

MEASURED DEPTH feet	INCL deg.	AZIMUTH deg.	VERTICAL SECTION feet	DOGLEG SEVERITY deg./ 100 ft.	VERTICAL DEPTH feet	CLOSURE DIST. feet	AZIMUTH deg.	HORIZONTAL COORDINATES feet
0.00	0.00	0.00	0.0	0.00	0.00	0.0	0.0	0.00 N 0.00 E

0 TO 1220 FT. RATE GYROSCOPIC SURVEY RUN INSIDE 4 1/2 XO DRILLPIPE

ALL MEASURED DEPTHS AND COORDINATES ARE REFERENCED TO SILVER OAK # 6 R.K.B.

100.00	0.46	308.87	0.3	0.46	100.00	0.4	308.9	0.25 N 0.31 W
200.00	0.42	304.90	0.7	0.05	200.00	1.2	307.6	0.72 N 0.93 W
300.00	0.41	304.95	1.1	0.01	299.99	1.9	306.6	1.13 N 1.53 W
400.00	0.42	298.27	1.5	0.05	399.99	2.6	305.2	1.51 N 2.15 W
500.00	0.34	293.27	1.8	0.08	499.99	3.3	303.4	1.81 N 2.74 W
600.00	0.29	283.27	2.0	0.08	599.99	3.8	301.3	1.98 N 3.26 W
700.00	0.30	295.46	2.1	0.06	699.99	4.3	299.9	2.15 N 3.74 W
800.00	0.36	292.72	2.4	0.06	799.98	4.9	299.2	2.38 N 4.26 W
900.00	0.46	284.06	2.6	0.12	899.98	5.6	297.8	2.60 N 4.94 W
1000.00	0.41	261.87	2.6	0.18	999.98	6.3	295.0	2.65 N 5.68 W
1100.00	0.37	279.50	2.6	0.12	1099.98	6.9	292.7	2.65 N 6.35 W
1200.00	0.08	69.50	2.7	0.45	1199.98	7.1	292.5	2.73 N 6.60 W
1220.00	0.11	103.13	2.7	0.30	1219.98	7.1	292.6	2.73 N 6.57 W

- 6.30

Final Station Closure: Distance: 7.12 ft Az: 292.58 deg.

PathFinder Energy Services, Inc.

Magnetic & Grid Calculations

YATES PETROLEUM
BELCO AIA FEDERAL # 4H
LEA COUNTY, NEW MEXICO
Rig: SILVER OAK # 6

Tue Apr 08 16:56:07 2008

Coordinates

Latitude: 32.566839 N (32 deg. 34 min. 0.6219 sec.)
Longitude: 103.741727 W (-103 deg. 44 min. 30.2178 sec.)
Elevation: 3530.00 feet.
Calculation Date: Apr/08/2008

Magnetic Calculations

Model: IGRF2005
Dip Angle: 60.5671 degrees
Total Magnetic Field: 0.49147 gauss
Magnetic Declination: 8.060038 degrees
Horizontal Intensity: 0.241511 gauss
To Convert a Magnetic Dir. to a TRUE North Dir. Add 8.060038 Degr

Transverse Mercator Grid Calculations NAD83

Grid System: Transverse Mercator: new mexico east
Ellipsoid: GRS80
X: 723592.5130 feet
Y: 570453.3600 feet
True to Grid: (convergence) -0.318460 degrees
Magnetic to Grid: 7.741579 degrees
To Convert a Magnetic Dir. to a GRID dir. Add 7.741579 Degr.

PathFinder Energy Services, Inc.

Magnetic & Grid Calculations

YATES PETROLEUM
BELCO AIA FEDERAL #4H
LEA COUNTY, NEW MEXICO
Rig:SILVER OAK #6

Fri May 23 07:30:49 2008

Coordinates

Latitude: 32.566839 N (32 deg. 34 min. 0.6219 sec.)
Longitude: 103.741727 W (-103 deg. 44 min. 30.2178 sec.)
Elevation: 3530.00 feet.
Calculation Date: Apr/10/2008

Magnetic Calculations

Model: IGRF2005
Dip Angle: 60.5669 degrees
Total Magnetic Field: 0.49173 gauss
Magnetic Declination: 8.061182 degrees
Horizontal Intensity: 0.241642 gauss

To Convert a Magnetic Dir. to a TRUE North Dir. Add 8.061182 Degr.

Transverse Mercator Grid Calculations NAD83

Grid System: Transverse Mercator: new mexico east
Datum: GRS80
X: 734941.61 m
Y: 570451.3600 feet
True to Grid: (convergence): -0.318460 degrees
Magnetic to Grid: 7.742722 degrees

To Convert a Magnetic Dir. to a GRID Dir. Add 7.742722 Deg.

SUR: M-14-20s-32e, 330/S & 1150/W
BHL: P-14-20s-32e, 669/S & 3963/W
API # 30-025-38818

Yates Petroleum Corp.

Belco AIA Federal #4H

S14 T20S R32E

Belco AIA Federal #4H

Original Hole

Survey: Sidetrack

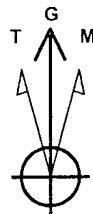
Pathfinder X & Y Survey Report

16 July, 2008

PATHFINDER
ENERGY SERVICES

Yates Petroleum Corporation

EOW



Azimuths to Grid North
True North: -0.32°
Magnetic North: 7.74°

Magnetic Field
Strength: 49149.3snT
Dip Angle: 60.57°
Date: 3/31/2008
Model: IGRF200510

PATHFINDER ENERGY SERVICES

Project: Belco AIA Federal #4H
Site: S14 T20S R32E
Well: Belco AIA Federal #4H
Wellbore: Original Hole
Survey: Sidetrack (Belco AIA Federal #4H/Original Hole)

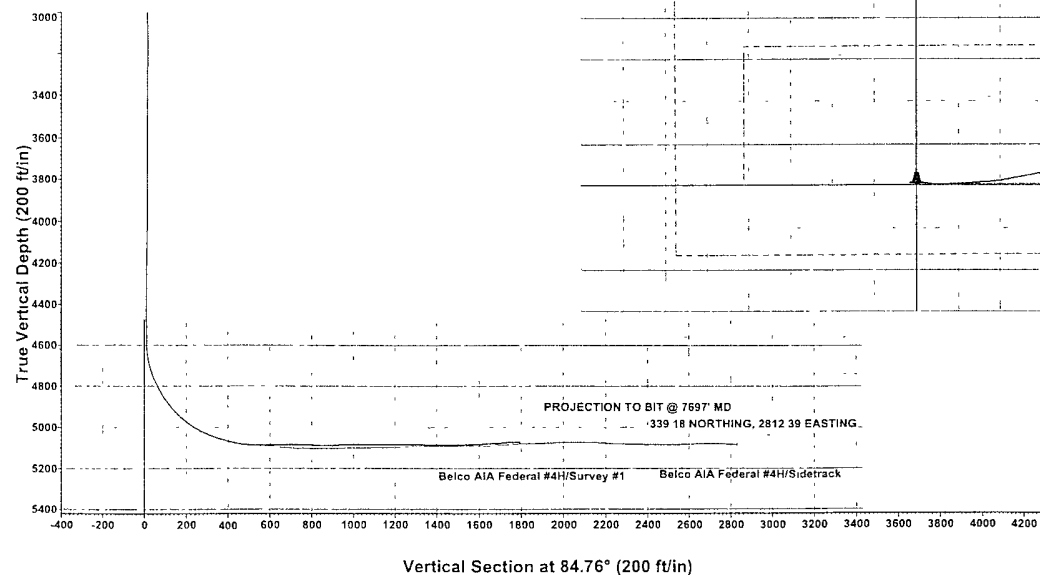
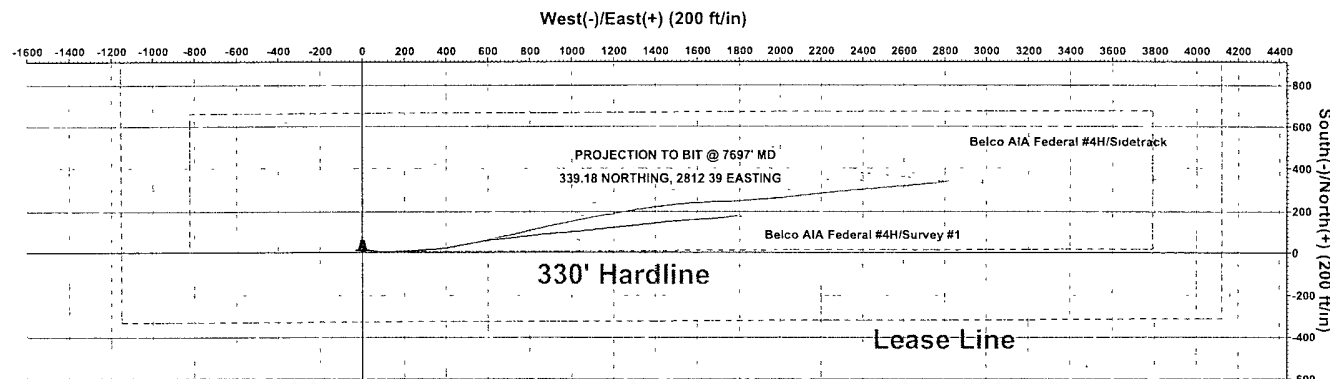
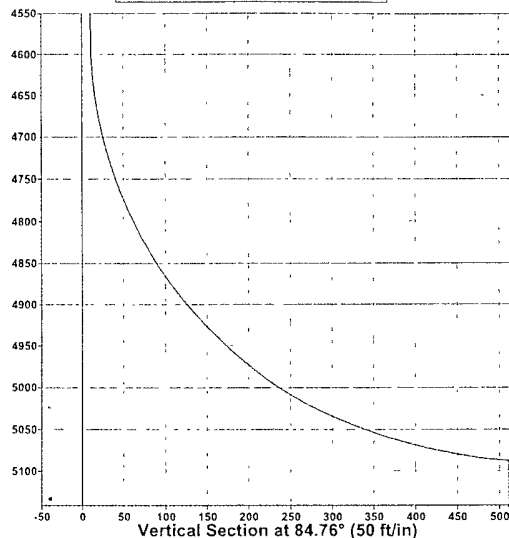
WELL DETAILS Belco AIA Federal #4H						
Ground Elevation	3530 00					
RKB Elevation	EST RKB @ 3530 00ft (Silver Oak 6)					
Rig Name	Silver Oak 6					
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0 00	0 00	570453 360	723592 513	32° 34' 0 622 N	103° 44' 30 218 W	

SECTION DETAILS	
No plan data is available	

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)						
Name	TVD	+N/-S	+E/-W	Northing	Easting	Shape
TGT3 @ 3000' VS	5085 00	333 68	2980 78	570787 040	726573 293	Point
PBHL	5094 00	347 72	3793 04	570801 080	727385 551	Point
PBHL2	5094 00	408 41	3786 24	570861 770	727378 753	Point

FORMATION TOP DETAILS
No formation data is available

CASING DETAILS
No casing data is available



PROJECT DETAILS Belco AIA Federal #4H
Geodetic System US State Plane 1983
Datum North American Datum 1983
Ellipsoid GRS 1980
Zone New Mexico Eastern Zone
System Datum Mean Sea Level
Local North: Grid

Survey Sidetrack (Belco AIA Federal #4H/Original Hole)

Created By Nate Bingham Date 11 43, July 16 2008

Checked _____ Date _____

Pathfinder Energy Services

Pathfinder X & Y Survey Report



Company: Yates Petroleum Corp
Project: Belco AIA Federal #4H
Site: S14 T20S R32E
Well: Belco AIA Federal #4H
Wellbore: Original Hole
Design: Original Hole

Local Co-ordinate Reference: Well Belco AIA Federal #4H
TVD Reference: EST RKB @ 3530 00ft (Silver Oak 6)
MD Reference: EST RKB @ 3530 00ft (Silver Oak 6)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 2003 16 Single User Db

Project: Belco AIA Federal #4H, Lea County, NM

Map System: US State Plane 1983
Geo Datum: North American Datum 1983
Map Zone: New Mexico Eastern Zone

System Datum: Mean Sea Level

Site: S14 T20S R32E

Site Position:		Northing:	570,453.360 ft	Latitude:	32° 34' 0.622 N
From:	Map	Easting:	723,592.513 ft	Longitude:	103° 44' 30.218 W
Position Uncertainty:	0.00 ft	Slot Radius:	"	Grid Convergence:	0.32 °

Well: Belco AIA Federal #4H

Well Position	+N/-S	0.00 ft	Northing:	570,453.360 ft	Latitude:	32° 34' 0.622 N
	+E/-W	0.00 ft	Easting:	723,592.513 ft	Longitude:	103° 44' 30.218 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	3,530.00 ft

Wellbore: Original Hole

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	3/31/2008	8.06	60.57	49,149

Design: Original Hole

Audit Notes:

Version: 1.0 **Phase:** ACTUAL **Tie On Depth:** 0.00

Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	84.76

Pathfinder Energy Services

Pathfinder X & Y Survey Report



Company: Yates Petroleum Corp.
Project: Belco AIA Federal #4H
Site: S14 T20S R32E
Well: Belco AIA Federal #4H
Wellbore: Original Hole
Design: Original Hole

Local Co-ordinate Reference: Well Belco AIA Federal #4H
TVD Reference: EST RKB @ 3530 00ft (Silver Oak 6)
MD Reference: EST RKB @ 3530 00ft (Silver Oak 6)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 2003.16 Single User Db

Survey Program		Date 7/16/2008			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
100 00	1,220 00	Gyro Survey (Original Hole)	CB-GYRO-MS	Camera based gyro multishot	
1,256 00	5,392 00	Survey #1 (Original Hole)	MWD	MWD - Standard	
5,397 00	7,697 00	Sidetrack (Original Hole)	MWD	MWD - Standard	

Survey

MD (ft)	Inc (°)	Azi (°)	TVD (ft)	TVDSS (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLeg (°/100ft)	Northing (ft)	Easting (ft)
5,392.00	89.25	78 60	5,087.95	1,557.95	47 85	531 64	533 79	0 00	570,501 21	724,124.15
5,393 00	88.64	77 92	5,087 97	1,557 97	48 05	532.62	534.78	91 34	570,501.41	724,125.13
5,425 00	84 50	76 81	5,089 88	1,559 88	55 04	563 78	566 45	13 39	570,508 40	724,156.29
5,457 00	85 12	77 16	5,092.78	1,562 78	62.21	594.83	598 03	2 22	570,515.57	724,187 34
5,489 00	84 77	76.90	5,095 60	1,565.60	69 37	625 89	629 61	1 36	570,522.73	724,218 40
5,519 00	85 30	76 96	5,098 19	1,568 19	76 13	655 00	659.22	1 78	570,529 49	724,247 52
5,551 00	86.35	76 96	5,100 52	1,570 52	83 33	686 10	690.84	3 28	570,536.69	724,278 61
5,583 00	88 20	76.85	5,102 04	1,572 04	90.57	717.23	722.50	5.79	570,543 93	724,309.74
5,615 00	88 90	76.20	5,102 85	1,572 85	98.02	748 34	754 16	2 98	570,551 38	724,340 85
5,646 00	89 34	76 23	5,103 33	1,573.33	105.41	778 44	784 81	1 42	570,558 77	724,370 95
5,677 00	90 04	77 56	5,103 50	1,573.50	112 44	808 63	815 52	4 85	570,565.80	724,401 14
5,710 00	90 92	77 87	5,103 22	1,573 22	119.46	840 87	848.27	2.83	570,572 82	724,433 39
5,741 00	90 57	77 35	5,102 82	1,572 82	126.11	871 15	879 03	2 02	570,579.47	724,463 66
5,772 00	90 48	77 42	5,102 53	1,572 53	132 88	901.40	909 77	0 37	570,586 24	724,493 91
5,804 00	90 66	78 13	5,102.21	1,572 21	139 66	932 67	941 53	2 29	570,593.02	724,525 19
5,835 00	91 01	78 68	5,101 76	1,571.76	145 89	963 04	972 33	2 10	570,599 25	724,555 55
5,867 00	90 92	78 85	5,101 22	1,571 22	152 12	994 42	1,004 16	0 60	570,605 48	724,586 93
5,898.00	90 57	78 46	5,100 82	1,570 82	158 22	1,024 81	1,034 98	1 69	570,611 58	724,617 32
5,930.00	90 31	77 97	5,100 57	1,570 57	164 75	1,056.13	1,066 77	1 73	570,618 11	724,648 65
5,960 00	90 40	78 80	5,100.39	1,570.39	170 79	1,085 52	1,096 58	2 78	570,624.15	724,678 03

Pathfinder Energy Services

Pathfinder X & Y Survey Report



Company: Yates Petroleum Corp
Project: Belco AIA Federal #4H
Site: S14 T20S R32E
Well: Belco AIA Federal #4H
Wellbore: Original Hole
Design: Original Hole

Local Co-ordinate Reference: Well Belco AIA Federal #4H
TVD Reference: EST RKB @ 3530 00ft (Silver Oak 6)
MD Reference: EST RKB @ 3530 00ft (Silver Oak 6)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 2003.16 Single User Db

Survey

MD (ft)	Inc (°)	Azi (°)	TVD (ft)	TVDSS (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLeg (°/100ft)	Northing (ft)	Easting (ft)
5,992.00	90.92	79.33	5,100.02	1,570.02	176.86	1,116.94	1,128.42	2.32	570,630.22	724,709.45
6,024.00	92.24	81.02	5,099.14	1,569.14	182.32	1,148.45	1,160.30	6.70	570,635.68	724,740.97
6,055.00	92.86	81.59	5,097.76	1,567.76	187.00	1,179.07	1,191.22	2.72	570,640.36	724,771.58
6,087.00	92.42	80.52	5,096.28	1,566.28	191.97	1,210.64	1,223.12	3.61	570,645.33	724,803.16
6,119.00	91.80	79.80	5,095.11	1,565.11	197.44	1,242.15	1,254.99	2.97	570,650.80	724,834.66
6,150.00	91.89	80.18	5,094.11	1,564.11	202.82	1,272.66	1,285.87	1.26	570,656.18	724,865.18
6,182.00	91.45	81.81	5,093.18	1,563.18	207.83	1,304.25	1,317.78	5.27	570,661.19	724,896.77
6,213.00	91.10	81.95	5,092.49	1,562.49	212.21	1,334.93	1,348.74	1.22	570,665.57	724,927.45
6,243.00	90.57	81.72	5,092.05	1,562.05	216.47	1,364.63	1,378.69	1.93	570,669.83	724,957.14
6,277.00	88.55	81.94	5,092.31	1,562.31	221.30	1,398.28	1,412.65	5.98	570,674.66	724,990.79
6,308.00	89.25	82.46	5,092.91	1,562.91	225.51	1,428.99	1,443.61	2.81	570,678.87	725,021.50
6,338.00	90.22	83.60	5,093.04	1,563.04	229.15	1,458.76	1,473.60	4.99	570,682.51	725,051.28
6,370.00	90.40	83.92	5,092.87	1,562.87	232.62	1,490.57	1,505.59	1.15	570,685.98	725,083.09
6,402.00	90.13	84.52	5,092.72	1,562.72	235.85	1,522.41	1,537.59	2.06	570,689.21	725,114.92
6,433.00	90.40	85.23	5,092.58	1,562.58	238.62	1,553.29	1,568.59	2.45	570,691.98	725,145.80
6,465.00	90.92	86.17	5,092.21	1,562.21	241.01	1,585.19	1,600.58	3.36	570,694.37	725,177.71
6,496.00	92.68	87.01	5,091.24	1,561.24	242.86	1,616.12	1,631.55	6.29	570,696.22	725,208.63
6,527.00	93.74	87.72	5,089.50	1,559.50	244.28	1,647.04	1,662.47	4.11	570,697.64	725,239.55
6,559.00	93.83	87.76	5,087.39	1,557.39	245.54	1,678.95	1,694.35	0.31	570,698.90	725,271.46
6,621.00	92.51	87.55	5,083.96	1,553.96	248.07	1,740.80	1,756.18	2.16	570,701.43	725,333.31
6,684.00	92.51	87.24	5,081.20	1,551.20	250.93	1,803.67	1,819.05	0.49	570,704.29	725,396.18
6,747.00	91.98	86.24	5,078.73	1,548.73	254.51	1,866.52	1,881.96	1.80	570,707.87	725,459.03
6,810.00	92.15	85.96	5,076.46	1,546.46	258.80	1,929.33	1,944.91	0.52	570,712.16	725,521.85
6,873.00	91.28	85.32	5,074.58	1,544.58	263.58	1,992.12	2,007.87	1.71	570,716.94	725,584.64
6,904.00	90.48	84.46	5,074.10	1,544.10	266.34	2,022.99	2,038.87	3.79	570,719.70	725,615.51
6,936.00	89.08	84.28	5,074.22	1,544.22	269.48	2,054.84	2,070.86	4.41	570,722.84	725,647.35
6,948.00	88.81	83.80	5,074.45	1,544.45	270.73	2,066.77	2,082.86	4.59	570,724.09	725,659.29

Pathfinder Energy Services

Pathfinder X & Y Survey Report



Company: Yates Petroleum Corp.
Project: Belco AIA Federal #4H
Site: S14 T20S R32E
Well: Belco AIA Federal #4H
Wellbore: Original Hole
Design: Original Hole

Local Co-ordinate Reference: Well Belco AIA Federal #4H
TVD Reference: EST RKB @ 3530 00ft (Silver Oak 6)
MD Reference: EST RKB @ 3530 00ft (Silver Oak 6)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 2003.16 Single User Db

Survey

MD (ft)	Inc (°)	Azi (°)	TVD (ft)	TVDSS (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLeg (°/100ft)	Northing (ft)	Easting (ft)
6,979 00	88 72	83 39	5,075 11	1,545 11	274.19	2,097 57	2,113 85	1.35	570,727.55	725,690.08
7,010 00	87.76	83 64	5,076 07	1,546 07	277 69	2,128.36	2,144 82	3.20	570,731 05	725,720.87
7,047 00	87.05	84 17	5,077.74	1,547 74	281.61	2,165.11	2,181 78	2 39	570,734 97	725,757 62
7,079 00	87 05	83 88	5,079 39	1,549 39	284.94	2,196 90	2,213 74	0 91	570,738 30	725,789.41
7,109 00	87.01	83 87	5,080 94	1,550 94	288 13	2,226 68	2,243.69	0 14	570,741 49	725,819 20
7,141 00	88 72	84.95	5,082 13	1,552.13	291 25	2,258 51	2,275 67	6 32	570,744 61	725,851 02
7,172 00	89 43	84.96	5,082 63	1,552 63	293 97	2,289 38	2,306 66	2.29	570,747 33	725,881.90
7,204 00	88 90	85 29	5,083.10	1,553.10	296.69	2,321.26	2,338 66	1 95	570,750 05	725,913 78
7,235 00	89 08	84 88	5,083.65	1,553.65	299.35	2,352 15	2,369 65	1 44	570,752.71	725,944 66
7,267 00	89 34	84 74	5,084 09	1,554.09	302 24	2,384 01	2,401 65	0 92	570,755 60	725,976 52
7,330 00	90 04	85 21	5,084.43	1,554 43	307 76	2,446.77	2,464 65	1.34	570,761.12	726,039.28
7,393 00	90 48	85 35	5,084 14	1,554 14	312.94	2,509 55	2,527 65	0.73	570,766 30	726,102.07
7,457 00	90 92	85.37	5,083 36	1,553.36	318 12	2,573 34	2,591 64	0 69	570,771 48	726,165.85
7,519.00	90.92	85 42	5,082 37	1,552 37	323.10	2,635 13	2,653 63	0 08	570,776.46	726,227 64
7,551 00	89 96	84 95	5,082 12	1,552.12	325.78	2,667 02	2,685 62	3 34	570,779.14	726,259.53
7,582.00	90 13	85 05	5,082.10	1,552 10	328.49	2,697 90	2,716 62	0 64	570,781.85	726,290.41
7,652 00	88 55	83 95	5,082 90	1,552 90	335 20	2,767 57	2,786.61	2 75	570,788.56	726,360 08
7,697 00	88 55	83 95	5,084 04	1,554 04	339 94	2,812.30	2,831 60	0 00	570,793 30	726,404.82

PROJECTION TO BIT @ 7697' MD - 339.18 NORTHING, 2812.39 EASTING

Pathfinder Energy Services

Pathfinder X & Y Survey Report



Company: Yates Petroleum Corp.
Project: Belco AIA Federal #4H
Site: S14 T20S R32E
Well: Belco AIA Federal #4H
Wellbore: Original Hole
Design: Original Hole

Local Co-ordinate Reference: Well Belco AIA Federal #4H
TVD Reference: EST RKB @ 3530 00ft (Silver Oak 6)
MD Reference: EST RKB @ 3530.00ft (Silver Oak 6)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 2003.16 Single User Db

Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
PBHL - survey misses by 980 82ft at 7697 00ft MD (5084.04 TVD, 339 94 N, 2812 30 E) - Point	0 00	0 00	5,094 00	347.72	3,793.04	570,801.080	727,385 551	32° 34' 3 852 N	103° 43' 45 872 W
PBHL2 - survey misses by 976 39ft at 7697 00ft MD (5084 04 TVD, 339 94 N, 2812.30 E) - Point	0 00	0.00	5,094 00	408.41	3,786.24	570,861 770	727,378 753	32° 34' 4.453 N	103° 43' 45 948 W
TGT3 @ 3000' VS - survey misses by 168 60ft at 7697 00ft MD (5084 04 TVD, 339.94 N, 2812.30 E) - Point	0 00	0 00	5,085 00	333 68	2,980 78	570,787.040	726,573 293	32° 34' 3.758 N	103° 43' 55.365 W

Survey Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
7,697 00	5,084 04	339 94	2,812 30	PROJECTION TO BIT @ 7697' MD
7,697 00	5,084 04	339.94	2,812 30	339 18 NORTHING, 2812 39 EASTING

Checked By: _____ Approved By: _____ Date: _____

Yates Petroleum Corporation

EOW



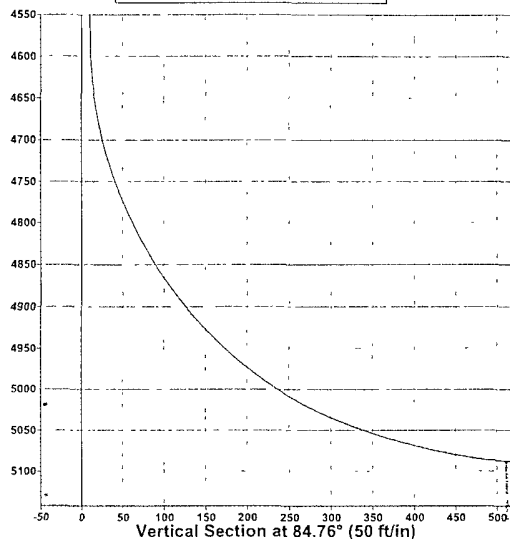
Azimuths to Grid North
True North: -0.32°
Magnetic North: 7.74°

Magnetic Field
Strength: 49149.3snT
Dip Angle: 60.57°
Date: 3/31/2008
Model: IGRF200510

PATHFINDER

ENERGY SERVICES

Project: Belco AIA Federal #4H
Site: S14 T20S R32E
Well: Belco AIA Federal #4H
Wellbore: Original Hole
Survey: Sidetrack (Belco AIA Federal #4H/Original Hole)



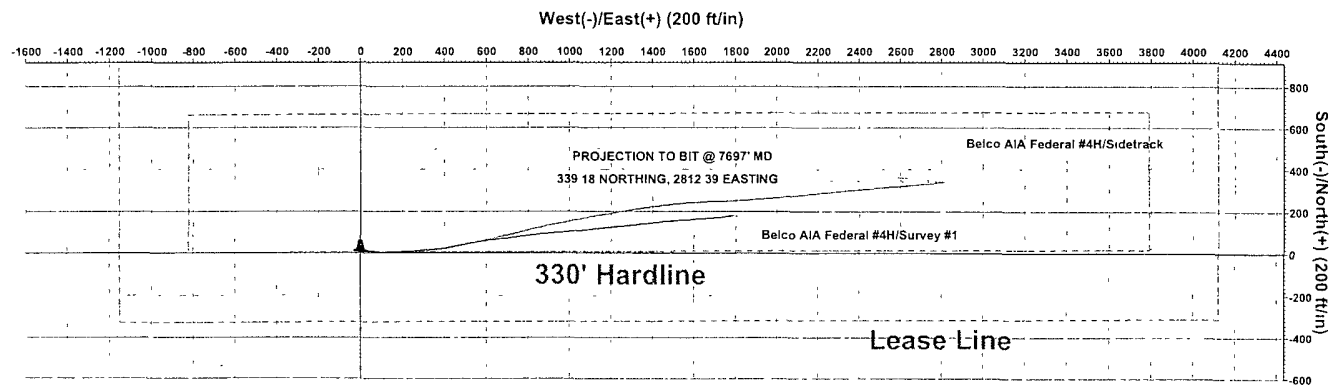
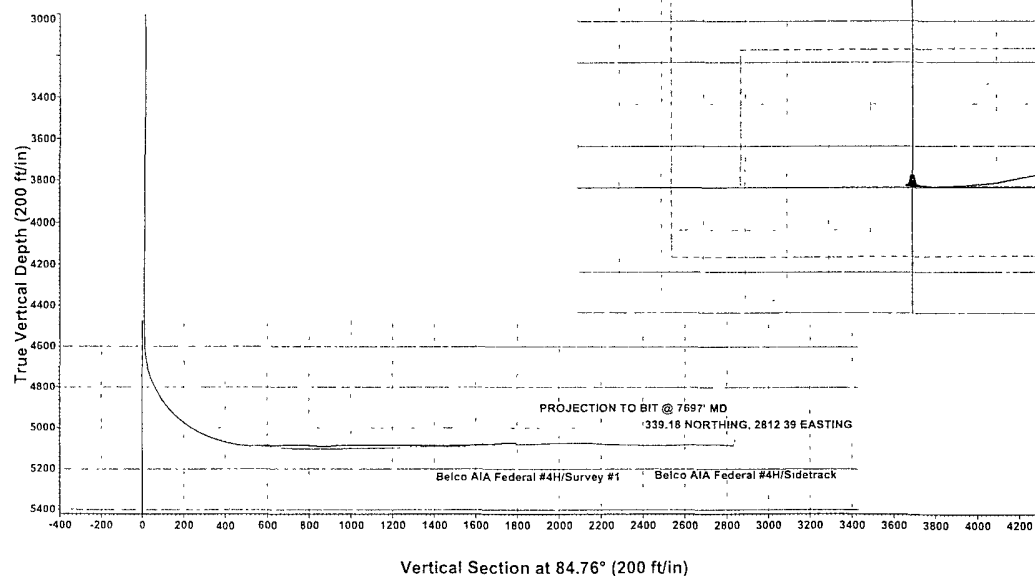
WELL DETAILS Belco AIA Federal #4H						
Ground Elevation	3530.00					
RKB Elevation	EST RKB @ 3530.00ft (Silver Oak 6)					
Rig Name	Silver Oak 6					
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	570453.360	723592.513	32° 34' 0.622 N	103° 44' 30.218 W	

SECTION DETAILS						
No plan data is available						

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)						
Name	TVD	+N/-S	+E/-W	Northing	Easting	Shape
TGT3 @ 3000' VS	5085.00	333.68	2980.78	570787.940	726573.293	Point
PBHL	5094.00	347.72	3793.04	570801.080	727385.551	Point
PBHL2	5094.00	408.41	3786.24	570861.770	727378.753	Point

FORMATION TOP DETAILS	
No formation data is available	

CASING DETAILS	
No casing data is available	



PROJECT DETAILS Belco AIA Federal #4H	
Geodetic System	US State Plane 1983
Datum	North American Datum 1983
Ellipsoid	GRS 1980
Zone	New Mexico Eastern Zone
System Datum	Mean Sea Level
Local North	Grid

Survey: Sidetrack (Belco AIA Federal #4H/Original Hole)	
Created By	Nate Blingham
Date	11/43, July 16 2008
Checked	
Date	



Gyrodata Incorporated
3811 S Co. Rd 1285
Odessa, TX 79765

432/561-8458
Fax 432/563-7982

SURVEY REPORT
Yates Petroleum
Belco Aia Fed 4H
Silver Oak #6
Lea County, New Mexico
MD0408G_189

16 Apr 2008

A Gyrodata Directional Survey

for

YATES PETROLEUM

Lease: Belco Aia Fed Well: 4H, 4 1/2 Xo Drillpipe
Location: Silver Oak #6, Lea County, New Mexico

Job Number: MD0408G_189

Run Date: 16 Apr 2008

Surveyor: Steve Winther

Calculation Method: MINIMUM CURVATURE

Survey Latitude: 32.566694 deg. N Longitude: 103.741222 deg. W

Azimuth Correction:

Gyro: -0.32000 deg West to Grid North

Vertical Section Calculated from Well Head Location

Closure Calculated from Well Head Location

Horizontal Coordinates Calculated from Well Head Location

A Gyrodata Directional Survey

Yates Petroleum

Lease: Belco Aia Fed Well. 4H, 4 1/2 Xo Drillpipe

Location: Silver Oak #6, Lea County, New Mexico

Job Number: MD0408G_189

MEASURED DEPTH feet	I N C L deg	AZIMUTH deg.	VERTICAL SECTION feet	DOGLEG SEVERITY deg./ 100 ft.	VERTICAL DEPTH feet	CLOSURE DIST. AZIMUTH feet deg.	HORIZONTAL COORDINATES feet
0.00	0.00	0.00	0.0	0.00	0.00	0.0 0.0	0.00 N 0.00 E

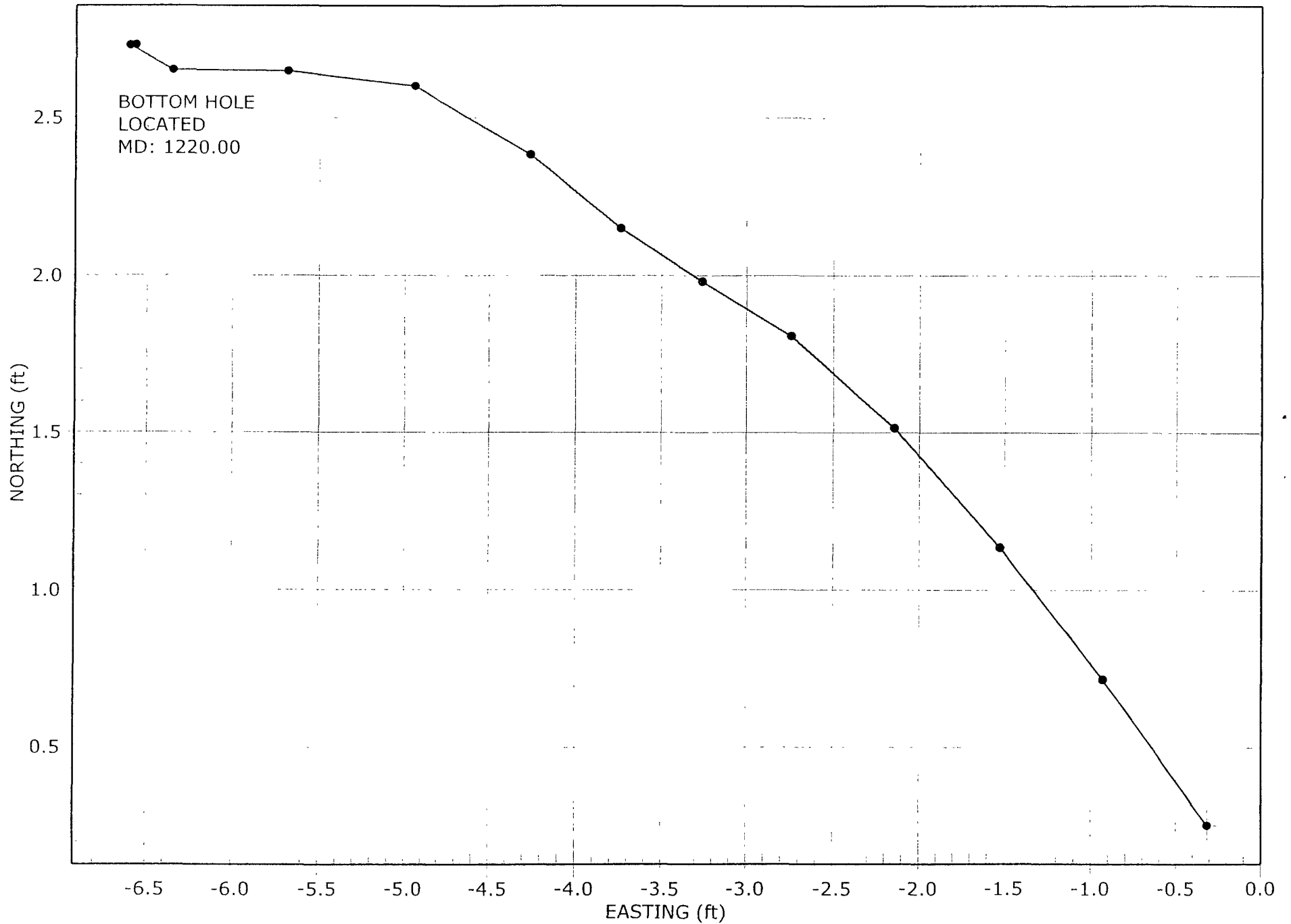
0 TO 1220 FT. RATE GYROSCOPIC SURVEY RUN INSIDE 4 1/2 XO DRILLPIPE							
ALL MEASURED DEPTHS AND COORDINATES ARE REFERENCED TO SILVER OAK # 6 R.K.B.							

100.00	0.46	308.87	0.3	0.46	100.00	0.4 308.9	0.25 N 0.31 W
200.00	0.42	304.90	0.7	0.05	200.00	1.2 307.6	0.72 N 0.93 W
300.00	0.41	304.95	1.1	0.01	299.99	1.9 306.6	1.13 N 1.53 W
400.00	0.42	298.27	1.5	0.05	399.99	2.6 305.2	1.51 N 2.15 W
500.00	0.34	293.27	1.8	0.08	499.99	3.3 303.4	1.81 N 2.74 W
600.00	0.29	283.27	2.0	0.08	599.99	3.8 301.3	1.98 N 3.26 W
700.00	0.30	295.46	2.1	0.06	699.99	4.3 299.9	2.15 N 3.74 W
800.00	0.36	292.72	2.4	0.06	799.98	4.9 299.2	2.38 N 4.26 W
900.00	0.46	284.06	2.6	0.12	899.98	5.6 297.8	2.60 N 4.94 W
1000.00	0.41	261.87	2.6	0.18	999.98	6.3 295.0	2.65 N 5.68 W
1100.00	0.37	279.50	2.6	0.12	1099.98	6.9 292.7	2.65 N 6.35 W
1200.00	0.08	69.50	2.7	0.45	1199.98	7.1 292.5	2.73 N 6.60 W
1220.00	0.11	103.13	2.7	0.30	1219.98	7.1 292.6	2.73 N 6.57 W

Final Station Closure: Distance: 7.12 ft Az: 292.58 deg.

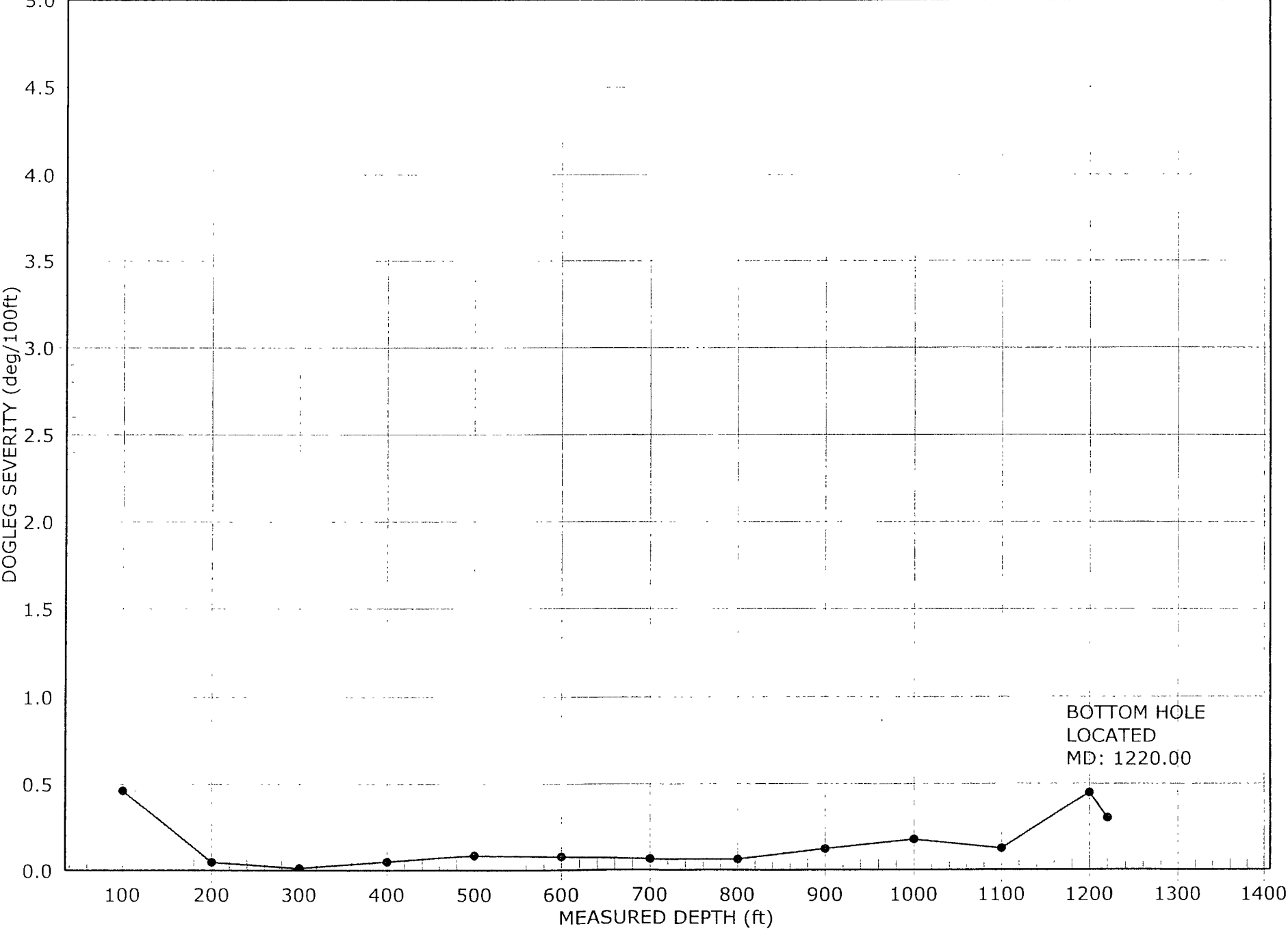
Yates Petroleum
Well: Belco Aia Fed 4H 4 1/2 Xo Drillpipe
Location: Silver Oak #6, Lea County, New Mexico

Inrun
Gyrodata
MD0408G_189 DEFINITIVE



Yates Petroleum
Well: Belco Aia Fed 4H 4 1/2 Xo Drillpipe
Location: Silver Oak #6, Lea County, New Mexico

Inrun
Gyrodata
MD0408G_189 DEFINITIVE



Yates Petroleum
Well: Belco Aia Fed 4H 4 1/2 Xo Drillpipe
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Inrun
Gyrodata
MD0408G_189 DEFINITIVE

