



SUR: B-3-16s-33e, 795/N & 2281/E  
BHL: B-3-16s-33e, 685/N & 2111/E  
API # 30-025-36223

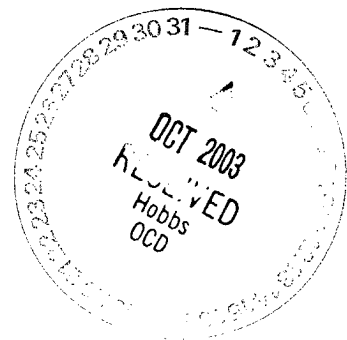
## ***DIRECTIONAL SURVEY REPORT***

***YATES PETROLEUM***

***BIG HAT STATE #3***

***LEA COUNTY, NEW MEXICO***

**PREPARED BY: DAVID M. YOUNG**



PathFinder Energy Services, Inc.  
3329 West Pinhook Road, Lafayette, LA 70508  
(337) 233-3982

June 18, 2003

**YATES PETROLEUM  
105 South Fourth St.  
Artesia, New Mexico 88210**

**Attn: Jim Krogman**

**RE: YATES PETROLEUM  
BIG HAT STATE #3  
LEA COUNTY, NEW MEXICO  
RIG: PATTERSON #498  
OUR FILE NO.: J-WT-0305-0014**

**Dear Mr. Krogman:**

**We hereby certify that the enclosed Original Field Survey Data contained in this report represents to the best of our knowledge, a true and accurate survey of the well at the time the survey was run.**

**SURVEY DATA**

- 1 - Original survey report**
- 2 - Survey report copies**

**We appreciate the opportunity to work with you and we look forward to your business support. If you have any questions, I can be reached at (318) 233-3982.**

**Sincerely,**



**David M. Young  
Service Coordinator  
PathFinder Energy Services**

**DIRECTIONAL SURVEY COMPANY REPORT:**

1. NAME OF SURVEYING COMPANY: PATHFINDER ENERGY SERVICES
2. NAME OF PERSON(S) PERFORMING SURVEY: A) MIKE SCHWARTZ
3. POSITION OF SAID PERSON(S): (A) SURVEYORS (FIELD ENGINEERS)
4. DATE(S) ON WHICH SURVEY WAS PERFORMED: 05/26/03 TO 05/30/03
5. STATE IN WHICH SURVEY WAS PERFORMED: LAND, NEW MEXICO
6. LOCATION OF WELL: LEA COUNTY, NEW MEXICO
7. TYPE OF SURVEY(S) PERFORMED: MWD
8. COMPLETE IDENTIFICATION OF WELL:  
  
YATES PETROLEUM  
BIG HAT STATE #3  
LEA COUNTY, NEW MEXICO  
RIG: PATTERSON #498
9. SURVEY CERTIFIED FROM: 12,950 TO 13,581 FEET MEASURED DEPTH.

THIS IS TO VERIFY THAT ATTACHED DOCUMENTS SHOWING THE WELL TO BE DISPLACED AT 180.06 FEET ON A BEARING OF 60.89 DEGREES FROM THE CENTER OF THE ROTARY TABLE AT PROJECTED MEASURED DEPTH OF 13,626 FEET, ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE.

  
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DAVID M. YOUNG  
SERVICE COORDINATOR

# Pathfinder

## Survey Report

Page 1  
Job No: J-WT-0305-0013  
Date: 6/3/2003  
Time: 10:37 am  
Wellpath ID: BIG HAT STATE #3  
Date Created: 5/25/2003  
Last Revision: 6/3/2003

Calculated using the Minimum Curvature Method  
Computed using PDS VER2.2.6  
Vertical Section Plane: 0.00 deg.

Survey Reference: WELLHEAD  
Vertical Section Reference: WELLHEAD  
Closure Reference: WELLHEAD  
TVD Reference: WELLHEAD

YATES PETROLEUM  
BIG HAT STATE #3  
LEA, CO. NEW MEXICO  
RIG: PATTERSON #498

DECL: 8.77° EAST TO TRUE  
KBH: 24' TO GROUND LEVEL

PES OFFICE SUPERVISOR:  
RON WELCH  
PES FIELD ENGINEER:  
MIKE SCHWARTZ

Measured Depth (ft)	Incl (deg.)	Drift Dir. (deg.)	TVD (ft)	Vertical Section (ft)	T O T A L Rectangular Offsets (ft)		Closure Dist. (ft)	Dir. (deg.)	DLS (dg/100ft)
TIE-IN TO GYRO SURVEY									
12940.00	4.58	51.95	12934.08	68.87	68.87 N	139.60 E	155.66@	63.74	0.00
THE FOLLOWING ARE MWD SURVEYS.									
12950.00	4.40	53.30	12944.05	69.35	69.35 N	140.22 E	156.43@	63.69	2.09
12981.00	4.00	52.40	12974.97	70.72	70.72 N	142.03 E	158.66@	63.53	1.31
13044.00	3.90	54.40	13037.82	73.30	73.30 N	145.52 E	162.94@	63.26	0.27
13107.00	3.90	48.20	13100.67	75.98	75.98 N	148.85 E	167.12@	62.96	0.67
13139.00	3.30	40.50	13132.61	77.40	77.40 N	150.26 E	169.03@	62.75	2.40
13202.00	2.30	11.90	13195.54	80.02	80.02 N	151.70 E	171.51@	62.19	2.68
13265.00	1.60	18.90	13258.50	82.09	82.09 N	152.25 E	172.97@	61.67	1.17
13328.00	0.60	75.90	13321.49	83.00	83.00 N	152.85 E	173.93@	61.50	2.17
13391.00	1.10	88.30	13384.48	83.10	83.10 N	153.78 E	174.79@	61.61	0.84
13454.00	1.30	44.10	13447.47	83.63	83.63 N	154.88 E	176.02@	61.63	1.46
13518.00	1.40	28.40	13511.45	84.84	84.84 N	155.76 E	177.36@	61.42	0.60
13581.00	1.80	29.80	13574.43	86.38	86.38 N	156.61 E	178.85@	61.12	0.64
STRAIGHT LINE PROJECTION TO BIT @ 13626'.									
13626.00	1.80	29.80	13619.40	87.60	87.60 N	157.32 E	180.06@	60.89	0.00