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DISTRICT II
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DISTRICT III
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Phone (505) 334-6176 Fax: (505) 334-6170

DISTRICT IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION

1220 South St. Francis Dr.
Santa Fe, New Mexico 87505

HOBBS OGD

DEC 09 2014

RECEIVED

Form C-102
Revised August 1, 2011

Submit one copy to appropriate
District Office

WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number 30-025-42314	Pool Code 96434	Pool Name Red Hills; Bone Spring, North
Property Code 38003	Property Name RED RAIDER BKS STATE	Well Number 4H
OGRID No. 025575	Operator Name YATES PETROLEUM CORPORATION	Elevation 3502

Surface Location

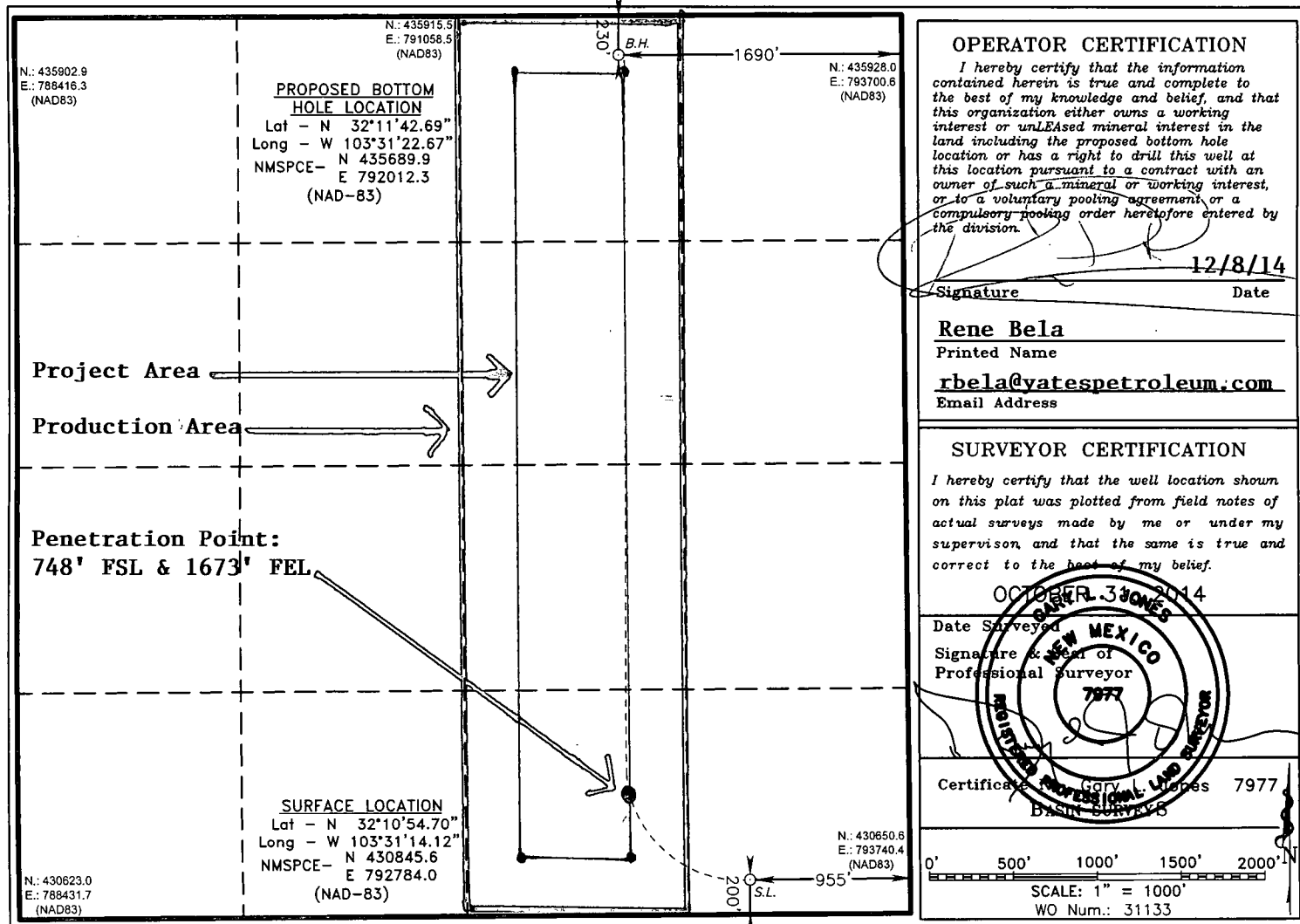
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	25	24 S	33 E		200	SOUTH	955	EAST	LEA

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
B	25	24 S	33 E		230	NORTH	1690	EAST	LEA

Dedicated Acres 160.00	Joint or Infill	Consolidation Code	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



DEC 10 2014



Yates Petroleum
Project: Lea County, NM (NAD-83)
Site: Red Raider BKS State
Well: #4H
Wellbore: OH
Plan: Plan #1 (#4H/OH)

WELL DETAILS: #4H

Ground Elevation:: 3502.0
RKB Elevation: RKB @ 3527.0usft (Cactus 124 - KB=25')
Rig Name: Cactus 124 - KB=25'

Surface Hole Location

Northing 430845.60 Easting 792784.00 Latitude 32° 10' 54.700 N Longitude 103° 31' 14.117 W



Azimuths to Grid North
True North: -0.43°
Magnetic North: 6.70°

Magnetic Field
Strength: 48250.0snT
Dip Angle: 60.07°
Date: 11/28/2014
Model: IGRF2010

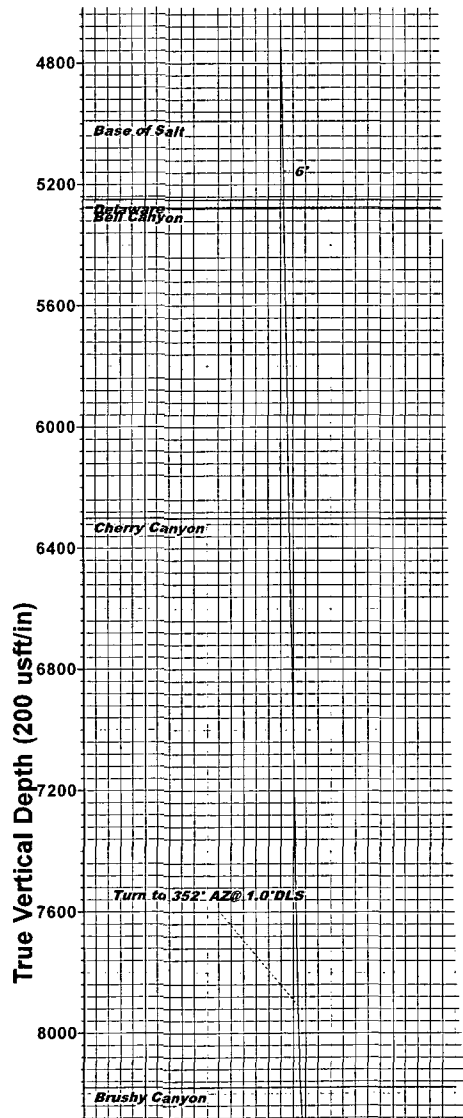
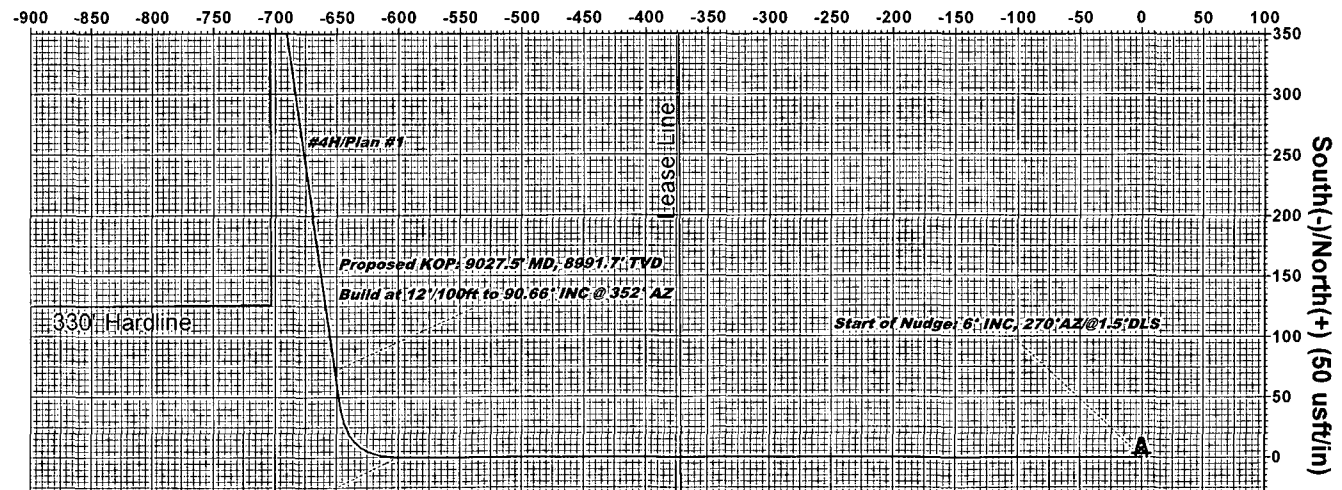
Section Details

	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0
2	2000.0	0.00	0.00	2000.0	0.0	0.0	0.00	0.00	0.0
3	2400.0	6.00	270.00	2399.3	0.0	-20.9	1.50	270.00	3.3
4	7941.1	6.00	270.00	7910.0	0.0	-600.1	0.00	0.00	94.4
5	8727.5	6.00	352.00	8693.4	40.8	-647.0	1.00	130.84	142.0
6	9027.5	6.00	352.00	8991.7	71.8	-651.4	0.00	0.00	173.4
7	9733.0	90.66	352.00	9419.3	547.5	-718.2	12.00	0.00	653.7
8	10114.3	90.66	359.62	9414.9	927.4	-746.1	2.00	89.98	1033.2
9	14031.5	90.66	359.62	9370.0	4844.3	-771.7	0.00	0.00	4905.4

DESIGN TARGET DETAILS

Name	+N/-S	+E/-W	Northing	Easting
RedRaider#2H	4742.1	-1260.9	435587.69	791523.10
RedRaider#1(158R)	1774.7	-1038.5	432620.26	791745.49
RedRaider#1(346R)	1774.7	-1038.5	432620.26	791745.49
PBHL(RedR#4H)	4844.3	-771.7	435689.90	792012.30

West(-)/East(+) (50 usft/in)



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-1800
Lease Line

HOBBS OCD

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Yates Petroleum

Lea County, NM (NAD-83)

Red Raider BKS State

#4H

OH

Plan: Plan #1

Standard Planning Report

02 December, 2014

Planning Report

Database:	Houston R5000 Database	Local Co-ordinate Reference:	Well #4H
Company:	Yates Petroleum	TVD Reference:	RKB @ 3527.0usft (Cactus 124 - KB=25')
Project:	Lea County, NM (NAD-83)	MD Reference:	RKB @ 3527.0usft (Cactus 124 - KB=25')
Site:	Red Raider BKS State	North Reference:	Grid
Well:	#4H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Project	Lea County, NM (NAD-83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	Red Raider BKS State		
Site Position:		Northing:	430,845.60 usft
From:	Map	Easting:	792,784.00 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 10' 54.700 N
		Longitude:	103° 31' 14.117 W
		Grid Convergence:	0.43 °

Well	#4H		
Well Position	+N/-S	0.0 usft	Northing:
	+E/-W	0.0 usft	Easting:
Position Uncertainty	0.0 usft	Wellhead Elevation:	0.0 usft
		Latitude:	32° 10' 54.700 N
		Longitude:	103° 31' 14.117 W
		Ground Level:	3,502.0 usft

Wellbore	OH		
Magnetics	Model Name	Sample Date	Declination (°)
	IGRF2010	11/28/2014	7.13
			Dip Angle (°)
			60.07
			Field Strength (nT)
			48,250

Design	Plan #1		
Audit Notes:			
Version:	Phase:	PLAN	Tie On Depth:
			0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)
	0.0	0.0	0.0
			Direction (°)
			350.95

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,400.0	6.00	270.00	2,399.3	0.0	-20.9	1.50	1.50	0.00	270.00	
7,941.1	6.00	270.00	7,910.0	0.0	-600.1	0.00	0.00	0.00	0.00	
8,727.5	6.00	352.00	8,693.4	40.8	-647.0	1.00	0.00	10.43	130.84	
9,027.5	6.00	352.00	8,991.7	71.8	-651.4	0.00	0.00	0.00	0.00	
9,733.0	90.66	352.00	9,419.3	547.5	-718.2	12.00	12.00	0.00	0.00	
10,114.3	90.66	359.62	9,414.9	927.4	-746.1	2.00	0.00	2.00	89.98	
14,031.5	90.66	359.62	9,370.0	4,844.3	-771.7	0.00	0.00	0.00	0.00	PBHL(RedR#4H)

Planning Report

Database:	Houston R5000 Database	Local Co-ordinate Reference:	Well #4H
Company:	Yates Petroleum	TVD Reference:	RKB @ 3527.0usft (Cactus 124 - KB=25')
Project:	Lea County, NM (NAD-83)	MD Reference:	RKB @ 3527.0usft (Cactus 124 - KB=25')
Site:	Red Raider BKS State	North Reference:	Grid
Well:	#4H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
RedRaider#2H - RedRaider#1(346R) - RedRaider#1(158R)									
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,190.0	0.00	0.00	1,190.0	0.0	0.0	0.0	0.00	0.00	0.00
Rustler									
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00
1,730.0	0.00	0.00	1,730.0	0.0	0.0	0.0	0.00	0.00	0.00
Salado									
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	0.00
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00
Start of Nudge: 6° INC, 270°AZ/@1.5°DLS									
2,100.0	1.50	270.00	2,100.0	0.0	-1.3	0.2	1.50	1.50	0.00
2,200.0	3.00	270.00	2,199.9	0.0	-5.2	0.8	1.50	1.50	0.00
2,300.0	4.50	270.00	2,299.7	0.0	-11.8	1.9	1.50	1.50	0.00
2,400.0	6.00	270.00	2,399.3	0.0	-20.9	3.3	1.50	1.50	0.00
2,500.0	6.00	270.00	2,498.7	0.0	-31.4	4.9	0.00	0.00	0.00
2,600.0	6.00	270.00	2,598.2	0.0	-41.8	6.6	0.00	0.00	0.00
2,700.0	6.00	270.00	2,697.6	0.0	-52.3	8.2	0.00	0.00	0.00
2,800.0	6.00	270.00	2,797.1	0.0	-62.7	9.9	0.00	0.00	0.00
2,900.0	6.00	270.00	2,896.5	0.0	-73.2	11.5	0.00	0.00	0.00
3,000.0	6.00	270.00	2,996.0	0.0	-83.6	13.2	0.00	0.00	0.00
3,100.0	6.00	270.00	3,095.4	0.0	-94.1	14.8	0.00	0.00	0.00
3,200.0	6.00	270.00	3,194.9	0.0	-104.5	16.4	0.00	0.00	0.00
3,300.0	6.00	270.00	3,294.3	0.0	-115.0	18.1	0.00	0.00	0.00
3,400.0	6.00	270.00	3,393.8	0.0	-125.5	19.7	0.00	0.00	0.00
3,500.0	6.00	270.00	3,493.2	0.0	-135.9	21.4	0.00	0.00	0.00
3,600.0	6.00	270.00	3,592.7	0.0	-146.4	23.0	0.00	0.00	0.00
3,700.0	6.00	270.00	3,692.1	0.0	-156.8	24.7	0.00	0.00	0.00
3,800.0	6.00	270.00	3,791.6	0.0	-167.3	26.3	0.00	0.00	0.00
3,900.0	6.00	270.00	3,891.1	0.0	-177.7	28.0	0.00	0.00	0.00
4,000.0	6.00	270.00	3,990.5	0.0	-188.2	29.6	0.00	0.00	0.00
4,100.0	6.00	270.00	4,090.0	0.0	-198.6	31.2	0.00	0.00	0.00
4,200.0	6.00	270.00	4,189.4	0.0	-209.1	32.9	0.00	0.00	0.00
4,300.0	6.00	270.00	4,288.9	0.0	-219.5	34.5	0.00	0.00	0.00
4,400.0	6.00	270.00	4,388.3	0.0	-230.0	36.2	0.00	0.00	0.00
4,500.0	6.00	270.00	4,487.8	0.0	-240.4	37.8	0.00	0.00	0.00
4,600.0	6.00	270.00	4,587.2	0.0	-250.9	39.5	0.00	0.00	0.00
4,700.0	6.00	270.00	4,686.7	0.0	-261.3	41.1	0.00	0.00	0.00

Planning Report

Database:	Houston R5000 Database	Local Co-ordinate Reference:	Well #4H
Company:	Yates Petroleum	TVD Reference:	RKB @ 3527.0usft (Cactus 124 - KB=25')
Project:	Lea County, NM (NAD-83)	MD Reference:	RKB @ 3527.0usft (Cactus 124 - KB=25')
Site:	Red Raider BKS State	North Reference:	Grid
Well:	#4H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,800.0	6.00	270.00	4,786.1	0.0	-271.8	42.8	0.00	0.00	0.00
4,900.0	6.00	270.00	4,885.6	0.0	-282.2	44.4	0.00	0.00	0.00
5,000.0	6.00	270.00	4,985.0	0.0	-292.7	46.0	0.00	0.00	0.00
5,005.0	6.00	270.00	4,990.0	0.0	-293.2	46.1	0.00	0.00	0.00
Base of Salt									
5,100.0	6.00	270.00	5,084.5	0.0	-303.2	47.7	0.00	0.00	0.00
5,200.0	6.00	270.00	5,183.9	0.0	-313.6	49.3	0.00	0.00	0.00
5,266.4	6.00	270.00	5,250.0	0.0	-320.5	50.4	0.00	0.00	0.00
Delaware									
5,291.6	6.00	270.00	5,275.0	0.0	-323.2	50.8	0.00	0.00	0.00
Bell Canyon									
5,300.0	6.00	270.00	5,283.4	0.0	-324.1	51.0	0.00	0.00	0.00
5,400.0	6.00	270.00	5,382.8	0.0	-334.5	52.6	0.00	0.00	0.00
5,500.0	6.00	270.00	5,482.3	0.0	-345.0	54.3	0.00	0.00	0.00
5,600.0	6.00	270.00	5,581.7	0.0	-355.4	55.9	0.00	0.00	0.00
5,700.0	6.00	270.00	5,681.2	0.0	-365.9	57.6	0.00	0.00	0.00
5,800.0	6.00	270.00	5,780.6	0.0	-376.3	59.2	0.00	0.00	0.00
5,900.0	6.00	270.00	5,880.1	0.0	-386.8	60.8	0.00	0.00	0.00
6,000.0	6.00	270.00	5,979.5	0.0	-397.2	62.5	0.00	0.00	0.00
6,100.0	6.00	270.00	6,079.0	0.0	-407.7	64.1	0.00	0.00	0.00
6,200.0	6.00	270.00	6,178.5	0.0	-418.1	65.8	0.00	0.00	0.00
6,300.0	6.00	270.00	6,277.9	0.0	-428.6	67.4	0.00	0.00	0.00
6,322.2	6.00	270.00	6,300.0	0.0	-430.9	67.8	0.00	0.00	0.00
Cherry Canyon									
6,400.0	6.00	270.00	6,377.4	0.0	-439.0	69.1	0.00	0.00	0.00
6,500.0	6.00	270.00	6,476.8	0.0	-449.5	70.7	0.00	0.00	0.00
6,600.0	6.00	270.00	6,576.3	0.0	-459.9	72.4	0.00	0.00	0.00
6,700.0	6.00	270.00	6,675.7	0.0	-470.4	74.0	0.00	0.00	0.00
6,800.0	6.00	270.00	6,775.2	0.0	-480.9	75.6	0.00	0.00	0.00
6,900.0	6.00	270.00	6,874.6	0.0	-491.3	77.3	0.00	0.00	0.00
7,000.0	6.00	270.00	6,974.1	0.0	-501.8	78.9	0.00	0.00	0.00
7,100.0	6.00	270.00	7,073.5	0.0	-512.2	80.6	0.00	0.00	0.00
7,200.0	6.00	270.00	7,173.0	0.0	-522.7	82.2	0.00	0.00	0.00
7,300.0	6.00	270.00	7,272.4	0.0	-533.1	83.9	0.00	0.00	0.00
7,400.0	6.00	270.00	7,371.9	0.0	-543.6	85.5	0.00	0.00	0.00
7,500.0	6.00	270.00	7,471.3	0.0	-554.0	87.2	0.00	0.00	0.00
7,600.0	6.00	270.00	7,570.8	0.0	-564.5	88.8	0.00	0.00	0.00
7,700.0	6.00	270.00	7,670.2	0.0	-574.9	90.4	0.00	0.00	0.00
7,800.0	6.00	270.00	7,769.7	0.0	-585.4	92.1	0.00	0.00	0.00
7,900.0	6.00	270.00	7,869.1	0.0	-595.8	93.7	0.00	0.00	0.00
7,941.1	6.00	270.00	7,910.0	0.0	-600.1	94.4	0.00	0.00	0.00
Turn to 352° AZ@ 1.0°DLS									
8,000.0	5.63	274.55	7,968.6	0.2	-606.1	95.6	1.00	-0.62	7.72
8,100.0	5.10	283.64	8,068.2	1.7	-615.3	98.4	1.00	-0.53	9.09
8,200.0	4.73	294.48	8,167.8	4.4	-623.4	102.4	1.00	-0.37	10.84
8,212.2	4.70	295.92	8,180.0	4.9	-624.3	103.0	1.00	-0.27	11.71
Brushy Canyon									
8,300.0	4.55	306.67	8,267.5	8.5	-630.3	107.6	1.00	-0.17	12.25
8,400.0	4.58	319.25	8,367.2	13.9	-636.1	113.8	1.00	0.03	12.58
8,500.0	4.83	331.09	8,466.8	20.6	-640.7	121.1	1.00	0.25	11.84
8,600.0	5.25	341.41	8,566.4	28.6	-644.2	129.6	1.00	0.43	10.31
8,700.0	5.82	349.95	8,666.0	38.0	-646.6	139.2	1.00	0.57	8.54
8,727.5	6.00	352.00	8,693.4	40.8	-647.0	142.0	1.00	0.64	7.46

Planning Report

Database:	Houston R5000 Database	Local Co-ordinate Reference:	Well #4H
Company:	Yates Petroleum	TVD Reference:	RKB @ 3527.0usft (Cactus 124 - KB=25')
Project:	Lea County, NM (NAD-83)	MD Reference:	RKB @ 3527.0usft (Cactus 124 - KB=25')
Site:	Red Raider BKS State	North Reference:	Grid
Well:	#4H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,800.0	6.00	352.00	8,765.4	48.3	-648.1	149.6	0.00	0.00	0.00
8,900.0	6.00	352.00	8,864.9	58.6	-649.5	160.1	0.00	0.00	0.00
9,000.0	6.00	352.00	8,964.3	69.0	-651.0	170.5	0.00	0.00	0.00
9,027.5	6.00	352.00	8,991.7	71.8	-651.4	173.4	0.00	0.00	0.00
Proposed KOP: 9027.5' MD, 8991.7' TVD - Build at 12°/100ft to 90.66° INC @ 352° AZ									
9,050.0	8.70	352.00	9,014.0	74.7	-651.8	176.3	11.98	11.98	0.00
9,075.0	11.70	352.00	9,038.6	79.0	-652.4	180.7	12.00	12.00	0.00
9,100.0	14.70	352.00	9,062.9	84.7	-653.2	186.4	12.00	12.00	0.00
9,125.0	17.70	352.00	9,087.0	91.6	-654.2	193.4	12.00	12.00	0.00
9,150.0	20.70	352.00	9,110.6	99.7	-655.3	201.6	12.00	12.00	0.00
9,175.0	23.70	352.00	9,133.7	109.1	-656.6	211.0	12.00	12.00	0.00
9,200.0	26.70	352.00	9,156.3	119.6	-658.1	221.7	12.00	12.00	0.00
9,225.0	29.70	352.00	9,178.4	131.3	-659.8	233.5	12.00	12.00	0.00
9,250.0	32.70	352.00	9,199.7	144.1	-661.6	246.4	12.00	12.00	0.00
9,275.0	35.70	352.00	9,220.4	158.1	-663.5	260.5	12.00	12.00	0.00
9,299.6	38.65	352.00	9,240.0	172.8	-665.6	275.3	12.00	12.00	0.00
Bone Spring									
9,300.0	38.70	352.00	9,240.3	173.0	-665.6	275.6	12.00	12.00	0.00
9,325.0	41.70	352.00	9,259.4	189.0	-667.9	291.7	12.00	12.00	0.00
9,350.0	44.70	352.00	9,277.6	205.9	-670.2	308.8	12.00	12.00	0.00
9,353.3	45.10	352.00	9,280.0	208.3	-670.6	311.2	12.00	12.00	0.00
Upper Avalon									
9,375.0	47.70	352.00	9,294.9	223.8	-672.7	326.9	12.00	12.00	0.00
9,400.0	50.70	352.00	9,311.3	242.5	-675.4	345.8	12.00	12.00	0.00
9,425.0	53.70	352.00	9,326.6	262.1	-678.1	365.5	12.00	12.00	0.00
9,450.0	56.70	352.00	9,340.9	282.4	-681.0	386.0	12.00	12.00	0.00
9,475.0	59.70	352.00	9,354.0	303.5	-683.9	407.3	12.00	12.00	0.00
9,500.0	62.70	352.00	9,366.1	325.2	-687.0	429.2	12.00	12.00	0.00
9,525.0	65.70	352.00	9,377.0	347.4	-690.1	451.7	12.00	12.00	0.00
9,550.0	68.70	352.00	9,386.7	370.3	-693.3	474.7	12.00	12.00	0.00
9,575.0	71.70	352.00	9,395.1	393.6	-696.6	498.2	12.00	12.00	0.00
9,600.0	74.70	352.00	9,402.4	417.3	-699.9	522.2	12.00	12.00	0.00
9,625.0	77.70	352.00	9,408.3	441.3	-703.3	546.4	12.00	12.00	0.00
9,650.0	80.70	352.00	9,413.0	465.6	-706.7	571.0	12.00	12.00	0.00
9,675.0	83.70	352.00	9,416.4	490.1	-710.2	595.7	12.00	12.00	0.00
9,700.0	86.70	352.00	9,418.5	514.8	-713.6	620.7	12.00	12.00	0.00
9,725.0	89.70	352.00	9,419.3	539.5	-717.1	645.6	12.00	12.00	0.00
9,733.0	90.66	352.00	9,419.3	547.5	-718.2	653.6	12.00	12.00	0.00
EOC: 9733.0' MD, 9419.3' TVD, 90.66° INC, 352.00° AZ, 653.6' VS - Turn to 359.62° AZ @ 2°DLS									
9,800.0	90.66	353.34	9,418.5	613.9	-726.8	720.6	2.00	0.01	2.00
9,900.0	90.66	355.34	9,417.3	713.4	-736.6	820.4	2.00	0.00	2.00
10,000.0	90.66	357.34	9,416.2	813.2	-743.0	920.0	2.00	0.00	2.00
10,100.0	90.66	359.34	9,415.0	913.1	-745.9	1,019.1	2.00	0.00	2.00
10,114.3	90.66	359.62	9,414.9	927.4	-746.1	1,033.2	2.00	0.00	2.00
10,200.0	90.66	359.62	9,413.9	1,013.1	-746.6	1,118.0	0.00	0.00	0.00
10,300.0	90.66	359.62	9,412.7	1,113.1	-747.3	1,216.8	0.00	0.00	0.00
10,400.0	90.66	359.62	9,411.6	1,213.1	-747.9	1,315.7	0.00	0.00	0.00
10,500.0	90.66	359.62	9,410.4	1,313.1	-748.6	1,414.5	0.00	0.00	0.00
10,600.0	90.66	359.62	9,409.3	1,413.1	-749.2	1,513.4	0.00	0.00	0.00
10,700.0	90.66	359.62	9,408.2	1,513.1	-749.9	1,612.2	0.00	0.00	0.00
10,800.0	90.66	359.62	9,407.0	1,613.1	-750.5	1,711.1	0.00	0.00	0.00
10,900.0	90.66	359.62	9,405.9	1,713.1	-751.2	1,809.9	0.00	0.00	0.00
11,000.0	90.66	359.62	9,404.7	1,813.1	-751.9	1,908.8	0.00	0.00	0.00

Planning Report

Database:	Houston R5000 Database	Local Co-ordinate Reference:	Well #4H
Company:	Yates Petroleum	TVD Reference:	RKB @ 3527.0usft (Cactus 124 - KB=25')
Project:	Lea County, NM (NAD-83)	MD Reference:	RKB @ 3527.0usft (Cactus 124 - KB=25')
Site:	Red Raider BKS State	North Reference:	Grid
Well:	#4H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
11,100.0	90.66	359.62	9,403.6	1,913.1	-752.5	2,007.6	0.00	0.00	0.00
11,200.0	90.66	359.62	9,402.4	2,013.0	-753.2	2,106.5	0.00	0.00	0.00
11,300.0	90.66	359.62	9,401.3	2,113.0	-753.8	2,205.3	0.00	0.00	0.00
11,400.0	90.66	359.62	9,400.1	2,213.0	-754.5	2,304.2	0.00	0.00	0.00
11,500.0	90.66	359.62	9,399.0	2,313.0	-755.1	2,403.0	0.00	0.00	0.00
11,600.0	90.66	359.62	9,397.9	2,413.0	-755.8	2,501.9	0.00	0.00	0.00
11,700.0	90.66	359.62	9,396.7	2,513.0	-756.4	2,600.7	0.00	0.00	0.00
11,800.0	90.66	359.62	9,395.6	2,613.0	-757.1	2,699.6	0.00	0.00	0.00
11,900.0	90.66	359.62	9,394.4	2,713.0	-757.7	2,798.4	0.00	0.00	0.00
12,000.0	90.66	359.62	9,393.3	2,813.0	-758.4	2,897.3	0.00	0.00	0.00
12,100.0	90.66	359.62	9,392.1	2,913.0	-759.1	2,996.1	0.00	0.00	0.00
12,200.0	90.66	359.62	9,391.0	3,013.0	-759.7	3,095.0	0.00	0.00	0.00
12,300.0	90.66	359.62	9,389.8	3,112.9	-760.4	3,193.8	0.00	0.00	0.00
12,400.0	90.66	359.62	9,388.7	3,212.9	-761.0	3,292.7	0.00	0.00	0.00
12,500.0	90.66	359.62	9,387.5	3,312.9	-761.7	3,391.5	0.00	0.00	0.00
12,600.0	90.66	359.62	9,386.4	3,412.9	-762.3	3,490.3	0.00	0.00	0.00
12,700.0	90.66	359.62	9,385.3	3,512.9	-763.0	3,589.2	0.00	0.00	0.00
12,800.0	90.66	359.62	9,384.1	3,612.9	-763.6	3,688.0	0.00	0.00	0.00
12,900.0	90.66	359.62	9,383.0	3,712.9	-764.3	3,786.9	0.00	0.00	0.00
13,000.0	90.66	359.62	9,381.8	3,812.9	-764.9	3,885.7	0.00	0.00	0.00
13,100.0	90.66	359.62	9,380.7	3,912.9	-765.6	3,984.6	0.00	0.00	0.00
13,200.0	90.66	359.62	9,379.5	4,012.9	-766.3	4,083.4	0.00	0.00	0.00
13,300.0	90.66	359.62	9,378.4	4,112.9	-766.9	4,182.3	0.00	0.00	0.00
13,400.0	90.66	359.62	9,377.2	4,212.9	-767.6	4,281.1	0.00	0.00	0.00
13,500.0	90.66	359.62	9,376.1	4,312.8	-768.2	4,380.0	0.00	0.00	0.00
13,600.0	90.66	359.62	9,374.9	4,412.8	-768.9	4,478.8	0.00	0.00	0.00
13,700.0	90.66	359.62	9,373.8	4,512.8	-769.5	4,577.7	0.00	0.00	0.00
13,800.0	90.66	359.62	9,372.7	4,612.8	-770.2	4,676.5	0.00	0.00	0.00
13,900.0	90.66	359.62	9,371.5	4,712.8	-770.8	4,775.4	0.00	0.00	0.00
14,000.0	90.66	359.62	9,370.4	4,812.8	-771.5	4,874.2	0.00	0.00	0.00
14,031.5	90.66	359.62	9,370.0	4,844.3	-771.7	4,905.4	0.00	0.00	0.00
TD: 14031.5' MD, 9370.0' TVD - PBHL(RedR#4H)									

Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
PBHL(RedR#4H)	0.00	0.00	9,370.0	4,844.3	-771.7	435,689.90	792,012.30	32° 11' 42.692 N	103° 31' 22.671 W
- plan hits target center									
- Point									

Planning Report

Database:	Houston R5000 Database	Local Co-ordinate Reference:	Well #4H
Company:	Yates Petroleum	TVD Reference:	RKB @ 3527.0usft (Cactus 124 - KB=25')
Project:	Lea County, NM (NAD-83)	MD Reference:	RKB @ 3527.0usft (Cactus 124 - KB=25')
Site:	Red Raider BKS State	North Reference:	Grid
Well:	#4H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,190.0	1,190.0	Rustler		0.00	
1,730.0	1,730.0	Salado		0.00	
5,005.0	4,990.0	Base of Salt		0.00	
5,266.4	5,250.0	Delaware		0.00	
5,291.6	5,275.0	Bell Canyon		0.00	
6,322.2	6,300.0	Cherry Canyon		0.00	
8,212.2	8,180.0	Brushy Canyon		0.00	
9,299.6	9,240.0	Bone Spring		0.00	
9,353.3	9,280.0	Upper Avalon		0.00	

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
2,000.0	2,000.0	0.0	0.0	Start of Nudge: 6° INC, 270°AZ/@1.5°DLS
7,941.1	7,910.0	0.0	-600.1	Turn to 352° AZ@ 1.0°DLS
9,027.5	8,991.7	71.8	-651.4	Proposed KOP: 9027.5' MD, 8991.7' TVD
9,027.5	8,991.7	71.8	-651.4	Build at 12°/100ft to 90.66° INC @ 352° AZ
9,733.0	9,419.3	547.5	-718.2	EOC: 9733.0' MD, 9419.3' TVD, 90.66° INC, 352.00° AZ, 653.6' VS
9,733.0	9,419.3	547.5	-718.2	Turn to 359.62° AZ@ 2°DLS
14,031.5	9,370.0	4,844.3	-771.7	TD: 14031.5' MD, 9370.0' TVD

Yates Petroleum

Lea County, NM (NAD-83)
Red Raider BKS State
#4H

OH
Plan #1

HOBBS OCD

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Anticollision Report

02 December, 2014

Anticollision Report

Company:	Yates Petroleum	Local Co-ordinate Reference:	Well #4H
Project:	Lea County, NM (NAD-83)	TVD Reference:	RKB @ 3527.0usft (Cactus 124 - KB=25')
Reference Site:	Red Raider BKS State	MD Reference:	RKB @ 3527.0usft (Cactus 124 - KB=25')
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	#4H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	Houston R5000 Database
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Reference	Plan #1		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum separation factor of 20.00	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program		Date	12/2/2014		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.0	14,031.5	Plan #1 (OH)	MWD	MWD - Standard	

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Red Raider BKS State						
#1 - OH - OH	10,962.4	9,416.7	137.2	79.4	2.374	CC, ES, SF
#2H - OH - OH	13,375.3	9,816.8	438.0	281.6	2.801	CC
#2H - OH - OH	13,400.0	9,800.3	438.2	281.5	2.796	ES
#2H - OH - OH	13,519.9	9,671.2	439.9	282.1	2.787	SF

Offset Design										Red Raider BKS State - #1 - OH - OH			Offset Site Error:		0.0 usft
Survey Program:										392-MWD			Offset Well Error:		0.0 usft
Reference		Offset		Semi Major Axis			Distance								
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning		
(usft)	(usft)	(usft)	(usft)	(usft)	(usft)	(°)	+N/-S (usft)	+E/-W (usft)	(usft)	(usft)	(usft)				
10,100.0	9,415.0	9,426.8	9,425.3	29.0	19.9	-95.86	1,774.7	-888.5	873.2	827.3	45.93	19.013			
10,114.3	9,414.9	9,426.6	9,425.1	29.1	19.9	-95.61	1,774.7	-888.5	859.2	813.1	46.08	18.646			
10,200.0	9,413.9	9,425.6	9,424.1	30.0	19.8	-95.19	1,774.7	-888.6	774.7	727.6	47.09	16.450			
10,300.0	9,412.7	9,424.4	9,422.9	31.1	19.8	-94.71	1,774.7	-888.6	676.5	628.1	48.33	13.996			
10,400.0	9,411.6	9,423.3	9,421.8	32.3	19.8	-94.23	1,774.7	-888.6	578.9	529.3	49.64	11.663			
10,500.0	9,410.4	9,422.1	9,420.6	33.6	19.8	-93.74	1,774.7	-888.7	482.4	431.4	51.00	9.459			
10,600.0	9,409.3	9,421.0	9,419.5	34.9	19.8	-93.26	1,774.7	-888.7	387.5	335.1	52.40	7.395			
10,700.0	9,408.2	9,419.8	9,418.3	36.2	19.8	-92.77	1,774.7	-888.7	296.1	242.3	53.85	5.500			
10,800.0	9,407.0	9,418.6	9,417.1	37.6	19.8	-92.29	1,774.7	-888.7	212.7	157.3	55.33	3.843			
10,900.0	9,405.9	9,417.5	9,416.0	39.0	19.8	-91.80	1,774.7	-888.8	150.8	93.9	56.84	2.652			
10,962.4	9,405.2	9,416.7	9,415.2	39.9	19.8	-91.50	1,774.7	-888.8	137.2	79.4	57.81	2.374	CC, ES, SF		
11,000.0	9,404.7	9,416.3	9,414.8	40.4	19.8	-91.32	1,774.7	-888.8	142.3	83.9	58.38	2.437			
11,100.0	9,403.6	9,415.1	9,413.6	41.9	19.8	-90.83	1,774.7	-888.8	194.3	134.4	59.95	3.241			
11,200.0	9,402.4	9,414.0	9,412.5	43.4	19.8	-90.35	1,774.7	-888.9	274.3	212.8	61.53	4.458			
11,300.0	9,401.3	9,412.8	9,411.3	45.0	19.8	-89.86	1,774.7	-888.9	364.4	301.2	63.13	5.772			
11,400.0	9,400.1	9,411.7	9,410.2	46.5	19.8	-89.38	1,774.7	-888.9	458.5	393.8	64.74	7.082			
11,500.0	9,399.0	9,410.5	9,409.0	48.1	19.8	-88.89	1,774.7	-889.0	554.8	488.4	66.37	8.358			
11,600.0	9,397.9	9,409.3	9,407.8	49.7	19.8	-88.41	1,774.7	-889.0	652.1	584.1	68.01	9.589			
11,700.0	9,396.7	9,408.2	9,406.7	51.3	19.8	-87.93	1,774.7	-889.0	750.2	680.5	69.65	10.770			
11,800.0	9,395.6	9,407.0	9,405.5	52.9	19.8	-87.44	1,774.7	-889.0	848.7	777.4	71.31	11.902			
11,900.0	9,394.4	9,405.8	9,404.4	54.5	19.8	-86.96	1,774.7	-889.1	947.5	874.5	72.97	12.985			
12,000.0	9,393.3	9,404.7	9,403.2	56.2	19.8	-86.48	1,774.7	-889.1	1,046.5	971.9	74.63	14.023			
12,100.0	9,392.1	9,403.5	9,402.0	57.8	19.8	-86.00	1,774.7	-889.1	1,145.7	1,069.4	76.29	15.017			

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	Yates Petroleum	Local Co-ordinate Reference:	Well #4H
Project:	Lea County, NM (NAD-83)	TVD Reference:	RKB @ 3527.0usft (Cactus 124 - KB=25')
Reference Site:	Red Raider BKS State	MD Reference:	RKB @ 3527.0usft (Cactus 124 - KB=25')
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	#4H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	Houston R5000 Database
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 usft
Survey Program: 392-MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Distance							Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
12,200.0	9,391.0	9,402.4	9,400.9	59.5	19.8	-85.52	1,774.7	-889.2	1,245.1	1,167.1	77.96	15.970		
12,300.0	9,389.8	9,401.2	9,399.7	61.2	19.8	-85.04	1,774.7	-889.2	1,344.5	1,264.9	79.63	16.884		
12,400.0	9,388.7	9,400.0	9,398.5	62.8	19.8	-84.56	1,774.7	-889.2	1,444.0	1,362.7	81.30	17.761		
12,500.0	9,387.5	9,398.9	9,397.4	64.5	19.8	-84.08	1,774.7	-889.3	1,543.6	1,460.6	82.97	18.604		
12,600.0	9,386.4	9,397.7	9,396.2	66.2	19.8	-83.61	1,774.7	-889.3	1,643.2	1,558.5	84.64	19.415		

Anticollision Report

Company:	Yates Petroleum	Local Co-ordinate Reference:	Well #4H
Project:	Lea County, NM (NAD-83)	TVD Reference:	RKB @ 3527.0usft (Cactus 124 - KB=25')
Reference Site:	Red Raider BKS State	MD Reference:	RKB @ 3527.0usft (Cactus 124 - KB=25')
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	#4H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	Houston R5000 Database
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 usft
Survey Program: 200-CB-GYRO-MS, 8980-MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Distance								Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
7,000.0	6,974.1	13,879.0	9,442.4	17.8	112.4	14.87	123.8	-1,214.7	2,432.5	2,306.8	125.73	19.347		
7,100.0	7,073.5	13,879.0	9,442.4	18.0	112.4	14.87	123.8	-1,214.7	2,334.6	2,208.6	125.97	18.533		
7,200.0	7,173.0	13,879.0	9,442.4	18.3	112.4	14.87	123.8	-1,214.7	2,236.8	2,110.6	126.21	17.723		
7,300.0	7,272.4	13,879.0	9,442.4	18.6	112.4	14.87	123.8	-1,214.7	2,139.3	2,012.8	126.45	16.919		
7,400.0	7,371.9	13,879.0	9,442.4	18.9	112.4	14.87	123.8	-1,214.7	2,042.0	1,915.3	126.68	16.119		
7,500.0	7,471.3	13,879.0	9,442.4	19.2	112.4	14.87	123.8	-1,214.7	1,944.9	1,818.0	126.92	15.324		
7,600.0	7,570.8	13,879.0	9,442.4	19.5	112.4	14.87	123.8	-1,214.7	1,848.2	1,721.1	127.16	14.534		
7,700.0	7,670.2	13,879.0	9,442.4	19.8	112.4	14.87	123.8	-1,214.7	1,751.9	1,624.5	127.40	13.751		
7,800.0	7,769.7	13,879.0	9,442.4	20.1	112.4	14.87	123.8	-1,214.7	1,656.0	1,528.4	127.64	12.974		
7,900.0	7,869.1	13,879.0	9,442.4	20.4	112.4	14.87	123.8	-1,214.7	1,560.6	1,432.7	127.88	12.204		
7,941.1	7,910.0	13,879.0	9,442.4	20.5	112.4	14.87	123.8	-1,214.7	1,521.6	1,393.6	127.98	11.889		
8,000.0	7,968.6	13,879.0	9,442.4	20.6	112.4	8.82	123.8	-1,214.7	1,465.9	1,337.4	128.47	11.410		
8,100.0	8,068.2	13,879.0	9,442.4	20.9	112.4	-2.60	123.8	-1,214.7	1,372.2	1,243.0	129.18	10.622		
8,200.0	8,167.8	13,879.0	9,442.4	21.1	112.4	-15.48	123.8	-1,214.7	1,279.7	1,150.0	129.77	9.861		
8,300.0	8,267.5	13,879.0	9,442.4	21.3	112.4	-29.45	123.8	-1,214.7	1,188.9	1,058.7	130.26	9.127		
8,400.0	8,367.2	13,879.0	9,442.4	21.5	112.4	-43.58	123.8	-1,214.7	1,100.2	969.5	130.67	8.419		
8,500.0	8,466.8	13,879.0	9,442.4	21.7	112.4	-56.76	123.8	-1,214.7	1,014.1	883.0	131.02	7.740		
8,600.0	8,566.4	13,879.0	9,442.4	21.9	112.4	-68.20	123.8	-1,214.7	931.3	800.0	131.32	7.092		
8,700.0	8,666.0	13,879.0	9,442.4	22.1	112.4	-77.69	123.8	-1,214.7	853.0	721.4	131.58	6.482		
8,727.5	8,693.4	13,879.0	9,442.4	22.1	112.4	-79.98	123.8	-1,214.7	832.4	700.7	131.65	6.323		
8,800.0	8,765.4	13,879.0	9,442.4	22.3	112.4	-79.98	123.8	-1,214.7	780.2	648.4	131.80	5.920		
8,900.0	8,864.9	13,879.0	9,442.4	22.5	112.4	-79.98	123.8	-1,214.7	714.1	582.1	132.01	5.409		
9,000.0	8,964.3	13,879.0	9,442.4	22.7	112.4	-79.98	123.8	-1,214.7	656.6	524.3	132.22	4.965		
9,027.5	8,991.7	13,879.0	9,442.4	22.7	112.4	-79.98	123.8	-1,214.7	642.5	510.3	132.28	4.857		
9,050.0	9,014.0	13,879.0	9,442.4	22.8	112.4	-81.44	123.8	-1,214.7	631.7	499.3	132.36	4.773		
9,075.0	9,038.6	13,879.0	9,442.4	22.8	112.4	-82.98	123.8	-1,214.7	620.2	487.8	132.40	4.684		
9,100.0	9,062.9	13,879.0	9,442.4	22.9	112.4	-84.42	123.8	-1,214.7	609.4	476.9	132.42	4.602		
9,125.0	9,087.0	13,879.0	9,442.4	23.0	112.4	-85.74	123.8	-1,214.7	599.3	466.8	132.42	4.525		
9,150.0	9,110.6	13,879.0	9,442.4	23.0	112.4	-86.94	123.8	-1,214.7	590.0	457.5	132.41	4.455		
9,175.0	9,133.7	13,876.5	9,442.4	23.1	112.4	-87.78	126.3	-1,214.6	581.5	449.1	132.39	4.392		
9,200.0	9,156.3	13,865.9	9,442.5	23.1	112.2	-87.76	136.9	-1,214.3	573.8	441.5	132.32	4.337		
9,225.0	9,178.4	13,854.1	9,442.6	23.2	112.1	-87.55	148.7	-1,213.9	566.9	434.6	132.26	4.286		
9,250.0	9,199.7	13,841.2	9,442.7	23.3	111.9	-87.18	161.6	-1,213.5	560.6	428.4	132.19	4.241		
9,275.0	9,220.4	13,827.2	9,442.8	23.4	111.7	-86.66	175.6	-1,213.0	555.1	423.0	132.10	4.202		
9,300.0	9,240.3	13,812.2	9,442.9	23.4	111.5	-86.01	190.6	-1,212.5	550.1	418.1	131.99	4.168		
9,325.0	9,259.4	13,795.8	9,443.0	23.5	111.3	-85.23	206.9	-1,212.0	545.7	413.9	131.85	4.139		
9,350.0	9,277.6	13,778.0	9,443.1	23.6	111.1	-84.32	224.7	-1,211.4	541.8	410.1	131.66	4.115		
9,375.0	9,294.9	13,759.3	9,443.2	23.7	110.9	-83.35	243.5	-1,210.7	538.3	406.9	131.41	4.096		
9,400.0	9,311.3	13,739.7	9,443.3	23.8	110.6	-82.34	263.0	-1,210.0	535.2	404.1	131.11	4.082		
9,425.0	9,326.6	13,719.3	9,443.3	23.9	110.4	-81.32	283.4	-1,209.2	532.3	401.5	130.74	4.071		
9,450.0	9,340.9	13,698.6	9,443.3	24.0	110.1	-80.33	304.1	-1,208.3	529.6	399.2	130.34	4.063		
9,475.0	9,354.0	13,677.5	9,443.3	24.1	109.9	-79.38	325.2	-1,207.4	527.0	397.1	129.91	4.057		
9,500.0	9,366.1	13,655.8	9,443.3	24.2	109.6	-78.49	346.9	-1,206.5	524.5	395.1	129.44	4.052		
9,525.0	9,377.0	13,633.5	9,443.2	24.4	109.3	-77.65	369.1	-1,205.6	522.1	393.1	128.95	4.049		
9,550.0	9,386.7	13,615.0	9,443.1	24.5	109.1	-77.09	387.6	-1,204.8	519.5	391.0	128.58	4.041		
9,575.0	9,395.1	13,590.7	9,443.0	24.6	108.8	-76.39	411.8	-1,203.8	517.0	388.9	128.08	4.036		
9,600.0	9,402.4	13,569.8	9,443.0	24.8	108.6	-75.95	432.8	-1,203.1	514.3	386.6	127.73	4.027		
9,625.0	9,408.3	13,548.5	9,443.1	24.9	108.3	-75.64	454.1	-1,202.6	511.6	384.2	127.43	4.015		
9,650.0	9,413.0	13,526.8	9,443.3	25.1	108.1	-75.45	475.8	-1,202.1	508.8	381.6	127.21	4.000		
9,675.0	9,416.4	13,503.8	9,443.6	25.3	107.8	-75.39	498.8	-1,201.7	505.8	378.7	127.04	3.981		
9,700.0	9,418.5	13,480.3	9,443.8	25.5	107.5	-75.48	522.3	-1,201.4	502.5	375.6	126.96	3.958		
9,725.0	9,419.3	13,456.7	9,444.1	25.7	107.2	-75.74	545.9	-1,201.1	499.0	372.0	126.98	3.930		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	Yates Petroleum	Local Co-ordinate Reference:	Well #4H
Project:	Lea County, NM (NAD-83)	TVD Reference:	RKB @ 3527.0usft (Cactus 124 - KB=25')
Reference Site:	Red Raider BKS State	MD Reference:	RKB @ 3527.0usft (Cactus 124 - KB=25')
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	#4H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	Houston R5000 Database
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 usft
Survey Program: 200-CB-GYRO-MS, 8989-MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
9,733.0	9,419.3	13,449.1	9,444.1	25.7	107.1	-75.86	553.5	-1,201.1	497.8	370.8	127.01	3.919		
9,800.0	9,418.5	13,383.1	9,444.6	26.3	106.4	-75.77	619.4	-1,200.5	488.6	361.8	126.87	3.851		
9,900.0	9,417.3	13,282.7	9,445.1	27.1	105.2	-75.66	719.8	-1,199.3	477.5	350.9	126.66	3.770		
10,000.0	9,416.2	13,186.7	9,446.4	28.0	104.1	-75.76	815.9	-1,198.5	469.9	343.3	126.58	3.712		
10,100.0	9,415.0	13,090.6	9,448.1	29.0	103.0	-76.00	911.9	-1,198.9	466.8	340.3	126.54	3.689		
10,114.3	9,414.9	13,076.5	9,448.3	29.1	102.9	-76.04	926.0	-1,198.9	466.7	340.2	126.53	3.688		
10,200.0	9,413.9	12,992.2	9,449.0	30.0	101.9	-76.24	1,010.3	-1,199.5	466.3	339.6	126.68	3.681		
10,268.4	9,413.1	12,925.2	9,449.5	30.8	101.2	-76.39	1,077.3	-1,200.1	466.2	339.3	126.84	3.675		
10,300.0	9,412.7	12,894.3	9,449.7	31.1	100.9	-76.47	1,108.2	-1,200.5	466.2	339.3	126.91	3.673		
10,400.0	9,411.6	12,793.9	9,449.8	32.3	99.8	-76.63	1,208.6	-1,201.5	466.3	339.1	127.16	3.667		
10,500.0	9,410.4	12,680.0	9,452.4	33.6	98.6	-77.13	1,322.3	-1,203.1	466.4	338.9	127.54	3.657		
10,600.0	9,409.3	12,586.5	9,462.4	34.9	97.6	-78.47	1,415.3	-1,204.1	464.3	335.8	128.44	3.615		
10,700.0	9,408.2	12,489.8	9,464.0	36.2	96.6	-78.79	1,511.9	-1,204.5	463.5	334.5	128.94	3.595		
10,800.0	9,407.0	12,387.9	9,463.7	37.6	95.5	-78.87	1,613.8	-1,204.5	462.7	333.3	129.38	3.576		
10,900.0	9,405.9	12,289.2	9,463.4	39.0	94.6	-78.96	1,712.5	-1,204.3	461.6	331.7	129.93	3.553		
11,000.0	9,404.7	12,190.2	9,464.0	40.4	93.6	-79.16	1,811.6	-1,204.8	461.2	330.6	130.53	3.533		
11,100.0	9,403.6	12,088.1	9,464.3	41.9	92.6	-79.34	1,913.7	-1,205.0	460.4	329.3	131.13	3.511		
11,200.0	9,402.4	11,984.3	9,464.4	43.4	91.6	-79.47	2,017.4	-1,204.4	459.1	327.3	131.75	3.484		
11,300.0	9,401.3	11,884.7	9,464.0	45.0	90.7	-79.52	2,117.0	-1,203.4	457.2	324.8	132.46	3.452		
11,400.0	9,400.1	11,790.7	9,463.8	46.5	89.9	-79.60	2,211.0	-1,203.1	456.1	322.8	133.26	3.423		
11,500.0	9,399.0	11,686.3	9,464.0	48.1	89.0	-79.76	2,315.4	-1,203.1	455.3	321.2	134.05	3.396		
11,600.0	9,397.9	11,589.6	9,464.3	49.7	88.3	-79.92	2,412.1	-1,203.1	454.4	319.4	134.95	3.367		
11,700.0	9,396.7	11,482.6	9,465.1	51.3	87.4	-80.15	2,519.1	-1,202.5	452.8	317.0	135.80	3.335		
11,800.0	9,395.6	11,381.5	9,465.5	52.9	86.6	-80.29	2,620.1	-1,201.1	450.5	313.8	136.68	3.296		
11,900.0	9,394.4	11,281.5	9,465.1	54.5	85.8	-80.34	2,720.2	-1,199.4	448.1	310.5	137.60	3.256		
12,000.0	9,393.3	11,182.8	9,464.5	56.2	85.1	-80.36	2,818.8	-1,197.7	445.6	307.1	138.58	3.216		
12,100.0	9,392.1	11,084.1	9,465.2	57.8	84.5	-80.56	2,917.5	-1,196.8	443.8	304.1	139.65	3.178		
12,200.0	9,391.0	10,982.4	9,465.3	59.5	83.8	-80.68	3,019.2	-1,195.6	441.7	301.0	140.70	3.140		
12,300.0	9,389.8	10,888.6	9,465.0	61.2	83.2	-80.74	3,113.1	-1,194.5	439.8	298.0	141.84	3.101		
12,334.0	9,389.4	10,858.3	9,465.1	61.7	83.0	-80.80	3,143.3	-1,194.6	439.7	297.4	142.26	3.091		
12,400.0	9,388.7	10,794.6	9,465.5	62.8	82.7	-80.95	3,207.1	-1,195.4	439.9	296.8	143.06	3.075		
12,500.0	9,387.5	10,696.8	9,465.6	64.5	82.1	-81.12	3,304.8	-1,197.0	440.7	296.4	144.26	3.055		
12,600.0	9,386.4	10,594.3	9,465.0	66.2	81.6	-81.22	3,407.3	-1,198.7	441.6	296.1	145.45	3.036		
12,700.0	9,385.3	10,487.7	9,464.0	67.9	81.0	-81.24	3,513.9	-1,199.1	441.3	294.7	146.66	3.009		
12,800.0	9,384.1	10,386.8	9,463.7	69.7	80.6	-81.33	3,614.8	-1,198.7	440.1	292.1	147.99	2.974		
12,900.0	9,383.0	10,287.3	9,466.1	71.4	80.2	-81.77	3,714.3	-1,198.6	438.9	289.4	149.45	2.937		
12,954.9	9,382.3	10,237.3	9,467.3	72.3	80.0	-82.00	3,764.2	-1,198.9	438.6	288.3	150.27	2.919		
13,000.0	9,381.8	10,195.9	9,467.7	73.1	79.8	-82.12	3,805.6	-1,199.5	438.8	287.9	150.92	2.907		
13,100.0	9,380.7	10,096.3	9,467.8	74.8	79.5	-82.29	3,905.2	-1,201.2	439.7	287.3	152.33	2.886		
13,200.0	9,379.5	9,994.0	9,467.0	76.5	79.2	-82.36	4,007.5	-1,202.9	440.6	286.8	153.77	2.865		
13,300.0	9,378.4	9,881.8	9,466.4	78.3	78.8	-82.43	4,119.7	-1,202.4	439.4	284.2	155.23	2.831		
13,375.3	9,377.5	9,816.8	9,465.7	79.6	78.7	-82.41	4,184.7	-1,201.6	438.0	281.6	156.37	2.801 CC		
13,400.0	9,377.2	9,800.3	9,464.7	80.0	78.6	-82.31	4,201.2	-1,201.7	438.2	281.5	156.73	2.796 ES		
13,500.0	9,376.1	9,689.7	9,450.9	81.8	78.4	-80.69	4,310.8	-1,202.4	439.9	282.3	157.68	2.790		
13,519.9	9,375.9	9,671.2	9,447.3	82.1	78.4	-80.25	4,329.0	-1,201.9	439.9	282.1	157.82	2.787 SF		
13,600.0	9,374.9	9,608.8	9,431.7	83.5	78.3	-78.29	4,389.4	-1,200.6	441.5	283.3	158.23	2.790		
13,700.0	9,373.8	9,536.4	9,406.2	85.3	78.2	-75.18	4,457.0	-1,200.7	449.4	291.3	158.11	2.842		
13,800.0	9,372.7	9,467.2	9,373.6	87.0	78.2	-71.32	4,518.1	-1,201.7	465.0	308.0	156.95	2.962		
13,900.0	9,371.5	9,399.4	9,333.7	88.8	78.2	-66.73	4,572.8	-1,201.1	488.3	333.9	154.41	3.163		
14,000.0	9,370.4	9,345.4	9,297.2	90.5	78.2	-62.71	4,612.6	-1,199.3	520.8	369.2	151.58	3.436		
14,031.5	9,370.0	9,331.9	9,287.6	91.1	78.2	-61.69	4,622.0	-1,199.0	533.1	382.2	150.85	3.534		

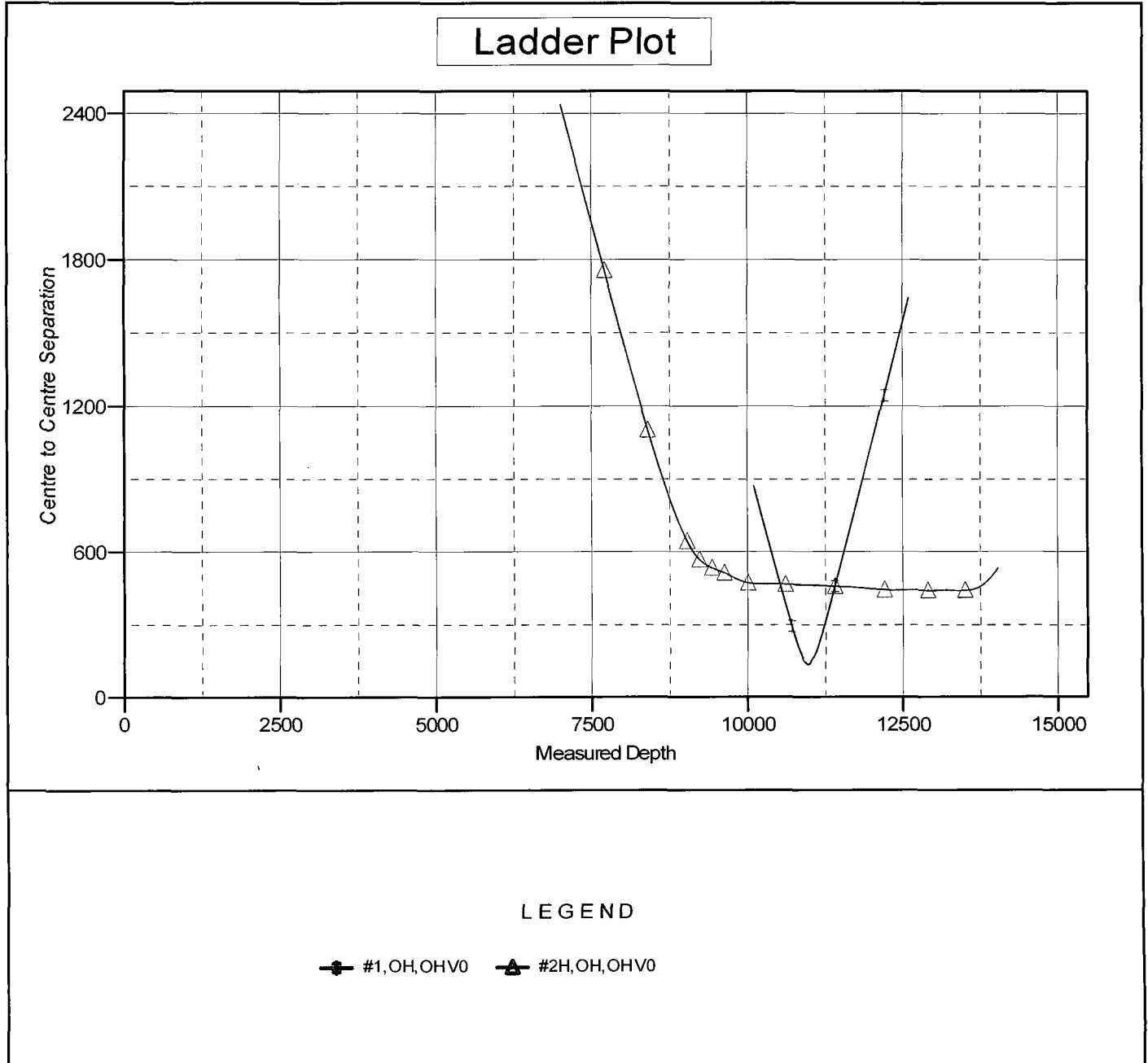
CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	Yates Petroleum	Local Co-ordinate Reference:	Well #4H
Project:	Lea County, NM (NAD-83)	TVD Reference:	RKB @ 3527.0usft (Cactus 124 - KB=25')
Reference Site:	Red Raider BKS State	MD Reference:	RKB @ 3527.0usft (Cactus 124 - KB=25')
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	#4H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	Houston R5000 Database
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to RKB @ 3527.0usft (Cactus 124 - KB=
Offset Depths are relative to Offset Datum
Central Meridian is 104° 20' 0.000 W

Coordinates are relative to: #4H
Coordinate System is US State Plane 1983, New Mexico Eastern Zone
Grid Convergence at Surface is: 0.43°



Anticollision Report

Company:	Yates Petroleum	Local Co-ordinate Reference:	Well #4H
Project:	Lea County, NM (NAD-83)	TVD Reference:	RKB @ 3527.0usft (Cactus 124 - KB=25')
Reference Site:	Red Raider BKS State	MD Reference:	RKB @ 3527.0usft (Cactus 124 - KB=25')
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	#4H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	Houston R5000 Database
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to RKB @ 3527.0usft (Cactus 124 - KB=

Offset Depths are relative to Offset Datum

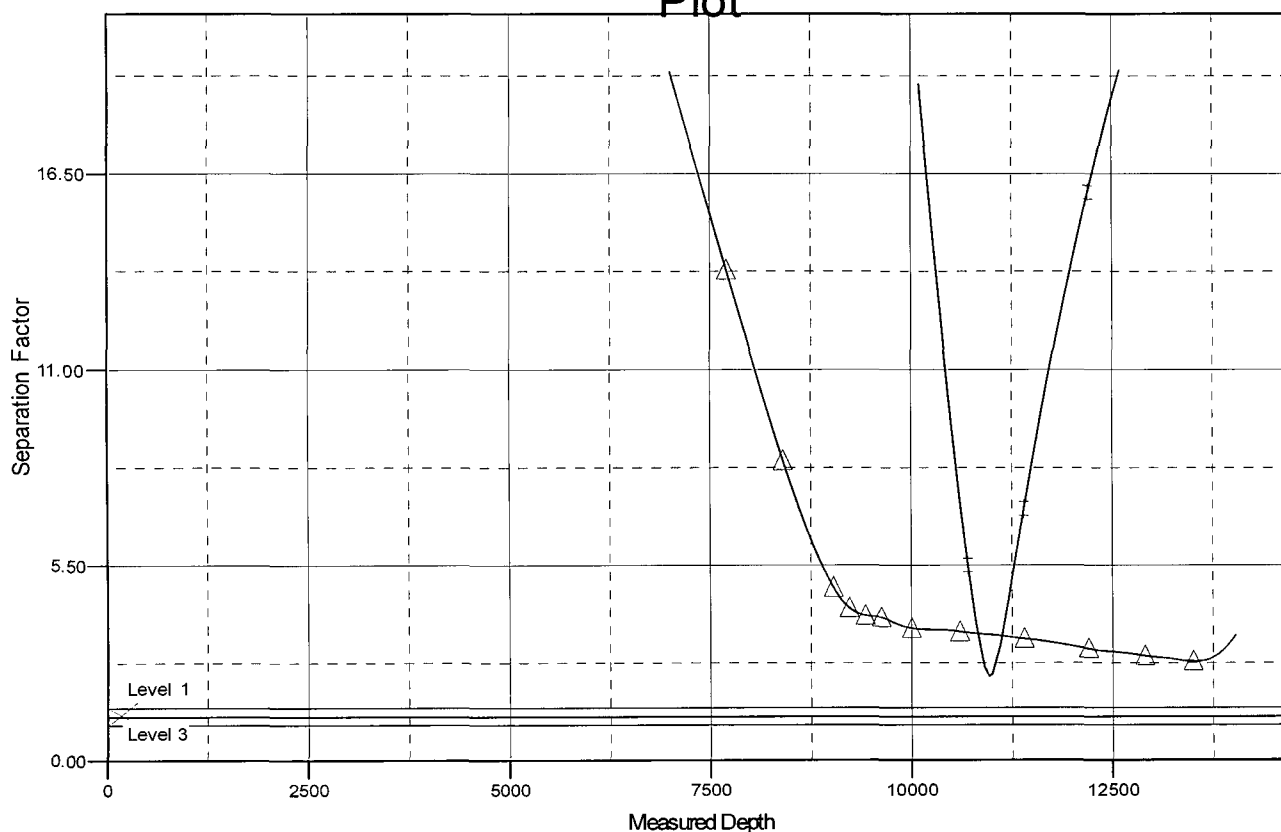
Central Meridian is 104° 20' 0.000 W

Coordinates are relative to: #4H

Coordinate System is US State Plane 1983, New Mexico Eastern Zone

Grid Convergence at Surface is: 0.43°

Separation Factor Plot



LEGEND

● #1, OH, OHV0 ▲ #2H, OH, OHV0