

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

State of New Mexico  
Energy Minerals and Natural Resources

Form C-101  
May 27, 2004

Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

Submit to appropriate District Office

☐ AMENDED REPORT

APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE

Operator Name and Address LCX ENERGY, LLC. 110 NORTH MARIENFELD SUITE 200 MIDLAND, TEXAS 79701		OGRID Number 218885
Property Code 35786	Property Name 1824 STATE	API Number 30: 015-34924
Proposed Pool 1 UNDES RIO PENASCO-WOLFCAMP		Well No. # 81
Proposed Pool 2		

7 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	8	18S	24E		760'	SOUTH	660'	EAST	EDDY CO.

8 Proposed 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
M	8	18S	24E		760'	SOUTH	660'	WEST	EDDY CO.

Additional Well Information

Work Type Code N	Well Type Code G	Cable/Rotary ROTARY	Lease Type Code S	Ground Level Elevation 3778'
Multiple NO	Proposed Depth MD-8730' TVD-4960'	Formation WOLFCAMP	Contractor BIG DOG DRILLING	Spud Date WHEN APPROVED
Depth to Groundwater 100'+	Distance from nearest fresh water well 1/2 MI SOUTHEAST	Distance from nearest surface water Rio Penasco 1.5 MI SOUTHWEST		
Pit: Liner: Synthetic <input checked="" type="checkbox"/> 12 mils thick Clay <input type="checkbox"/> Pit Volume: 18M bbls Drilling Method: Closed-Loop System <input type="checkbox"/> Fresh Water <input checked="" type="checkbox"/> Brine <input checked="" type="checkbox"/> Diesel/Oil-based <input type="checkbox"/> Gas/Air <input type="checkbox"/>				

21 Proposed Casing and Cement Program

Hole Size	Casing Size	Casing weight/foot	Setting Depth	Sacks of Cement	Estimated TOC
26"	20"	NA	40'	Redi-mix	Surface
17 1/2"	13 3/8"	48#	350'	400 Sx.	Surface
12 1/2"	9 5/8"	36#	1200'	475 Sx.	Surface
8 3/4" - 7 7/8"	5 1/2"	15.5#	MD-8730' TVD 4960'	600 Sx.	Est. TOC 1000' FS

22 Describe the proposed program. If this application is to DEEPEN or PLUG BACK, give the data on the present productive zone and proposed new productive zone. Describe the blowout prevention program, if any. Use additional sheets if necessary.

NOTIFY OCD OF SPUD &  
TIME TO WITNESS  
CEMENTING OF SURFACE &  
INTERMEDIATE CASING

SEE ATTACHED SHEET FOR DETAIL

Operator to verify tie-back w/ Temp. survey or CBL

I hereby certify that the information given above is true and complete to the best of my knowledge and belief. I further certify that the drilling pit will be constructed according to NMOCD guidelines <input checked="" type="checkbox"/> , a general permit <input type="checkbox"/> , or an (attached) alternative OCD-approved plan <input type="checkbox"/> .		OIL CONSERVATION DIVISION	
Printed name: Joe T. Janica		Approved by: BRYAN G. ARRANT	
Title: Agent		DISTRICT II GEOLOGIST	
E-mail Address: joe.janica@valornet.com		Approval Date: JUN 12 2006 Expiration Date: JUN 12 2007	
Date: 06/07/06	Phone: 505-391-8503	Conditions of Approval Attached <input type="checkbox"/>	

**LCX ENERGY, LLC**  
110 N. Marienfeld St., Suite 200  
Midland, TX 79701  
April 26, 2006

**Horizontal Drilling Procedure  
Abo Wildcat Horizontals  
(Eddy Co., NM)**

1. Drill 26" hole to 40'. Set 40' of 20" conductor pipe and cement to surface with Redi-mix.
2. Drill 17-1/2" hole to 350'.
3. Drill 12-1/4" hole to 1200'. Run and set 1200' of 9-5/8" 36# J-55 ST&C casing. Cement with 375 sx of 35/65 Poz/C + 5% NaCl + 6% Bentonite, tail in with 100 sx. of Class "C" cement + 2% CaCl, circulate cement to surface.
4. Drill 7-7/8" or 8-3/4" hole to approx. 5000'. Set cement kick-off plug from TD to approx. 4400 ft with 150 sx H + 0.5% dispersant.
5. Dress cement top to desired kick-off point. Drill 7-7/8" curve and land lateral in pay zone (approx. 4900 ft TVD). Pickup lateral drilling assembly with an 8-3/4" or 7-7/8" bit and drill a +/-4000' lateral to 660' from lease line (approx. 4000 ft vertical section).
6. Run and set 5-1/2" 17# N80 or stronger production casing. Cement 5-1/2" with acid soluble cement through the lateral and 400 sx 50/50 Poz/C + 10% gel and tail in with 200 sx C + 200% CaCO<sub>3</sub> (acid soluble cement) + fluid loss additive + retarder (as required), attempting to bring top of cement to 1,000'.

**Contingency Strings:**

If lost circulation occurs in the surface hole:

- 2a. Run and set 350' of 13-3/8" 48# H-40 ST&C casing. Cement with 200 sx 35/65 Poz/C + 6% gel and tail in with 200 sx of Class "C" cement + 2% CaCl, circulate cement to surface.

If hole conditions dictate running a 7" contingency string in the 8-3/4" hole :

- 4a. Run approx. 5100 ft 7" 26# J55 or stronger casing to TD. Cement with 700 sx class 'C' cement + add's attempting bringing TOC to approx. 1,000 ft. This may be done in the vertical pilot hole or at the end of the 8-3/4" curve section.
- 4b. Run whipstock and cut a window in the 7" casing (or drill out with 6-1/8" BHA if 7" set at end of curve). Drill to TD.
- 5a. Step 5 will be omitted.
- 6a. Run and set approximately 4400 ft 4-1/2" 11.6# N/L80 liner from TD to approximately 200' above the window/7" casing shoe. Cement with approx. 110 sx C + 200% CaCO<sub>3</sub> (acid soluble cement) + add's attempting to bring TOC above liner top.

FRESH WATER WILL BE USED TO DRILL THE 350' HOLE AND THE 1200' HOLE.

THERE IS NO KNOWN PRESENCE OF ANY H<sub>2</sub>S IN THIS AREA. OTHER WELLS DRILLED HAVE NOT ENCOUNTERED ANY HYDROGEN SULFIDE WHILE DRILLING.

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State of New Mexico  
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION  
1220 South St. Frances Dr.  
Santa Fe, NM 87505

Form C-102  
Revised October 12, 2005  
Submit to Appropriate District Office  
State Lease - 4 Copies  
Fee Lease - 3 Copies

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code 97512	Pool Name UNDES RIO PENASCO-WOLFCAMP
Property Code	Property Name 1824 STATE	Well Number 81
OGRID No. 218885	Operator Name LCX ENERGY, LLC	Elevation 3778'

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	8	18 S	24 E		660	EAST	760	SOUTH	EDDY

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
M	8	18 S	24 E		660	WEST	760	SOUTH	EDDY

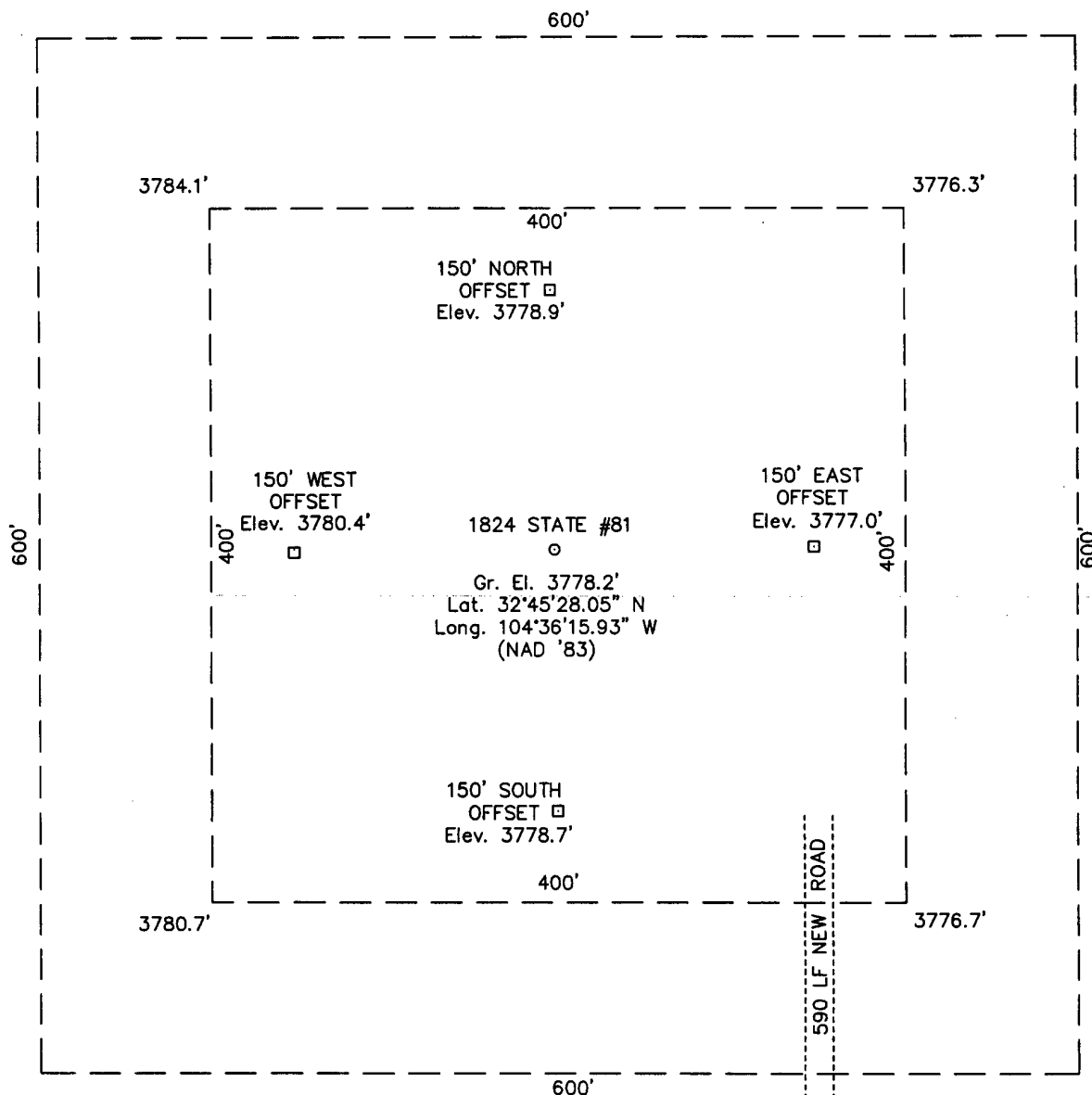
Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
320			

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

<p>NOTE:</p> <p>1) Plane Coordinates shown hereon are Transverse Mercator Grid and Conform to the "New Mexico Coordinate System", New Mexico East Zone, North American Datum of 1983. Distances shown hereon are mean horizontal surface values.</p>	<p>PROJECT AREA</p> <p>PRODUCING AREA</p> <p>VA-2573</p> <p>Plane Coordinate</p> <p>X = 484,026.2 Y = 639,518.2</p> <p>BL</p> <p>660'</p> <p>760'</p> <p>3795'</p> <p>3784.1'</p> <p>3776.3'</p> <p>3780.7'</p> <p>3776.7'</p> <p>SL</p> <p>660'</p> <p>760'</p>	<p>OPERATOR CERTIFICATION</p> <p>I hereby certify the the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or undivided mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.</p> <p><i>Joe T. Janica</i></p> <p>Signature</p> <p>Date 06/07/06</p> <p>Joe T. Janica</p> <p>Printed Name</p> <p>Agent</p>
		<p>SURVEYOR CERTIFICATION</p> <p>I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision and that the same is true and correct to the best of my belief.</p> <p>May 27, 2006</p> <p>Date of Survey</p> <p>JSR</p> <p>Signature &amp; Seal of Professional Surveyor</p> <p>NEW MEXICO</p> <p>12185</p> <p>W.O. Num. 2006-0412</p> <p>Certificate No. MACON McDONALD 12185</p>

SECTION 8, TOWNSHIP 18 SOUTH, RANGE 24 EAST, N.M.P.M.  
EDDY COUNTY NEW MEXICO

L-2006-0412



**DRIVING DIRECTIONS**

Beginning at the intersection of State Highway 285 with US Highway 82 in Artesia, proceed South on State Highway 285 for approximately 6.0 miles; Thence West along paved County Road 39 approximately 8.2 miles, continuing in a Westerly direction along caliche lease road approximately 3.5 miles to a caliche lease road to the North. Turn North on said caliche lease road and continue for approximately 0.5 miles to a two-track road to the West. Drive West along said two-track road for approximately 0.4 miles to a point from which the well location bears North 600 feet.

**LCX ENERGY, LLC**

**1824 STATE #81**

Located 760' FSL & 660' FEL, Section 8  
Township 18 S, Range 24 E, N.M.P.M.  
Eddy County, New Mexico

Drawn By: JSR	Date: June 1, 2006
Scale: 1"=100'	Field Book:
Revision Date:	Quadrangle: Hope SE, N.M.
W.O. No: 2006-0412	Dwg. No.: L-2006-0412



110 W. LOUISIANA, STE. 110  
MIDLAND TEXAS, 79701  
(432) 687-0865 - (432) 687-0868 FAX

[illegible]

CONTOUR INTERVAL:  
HOPE SE, NM - 10'

U.S.G.S. TOPOGRAPHIC MAP  
HOPE SE N.M.



**WEST  
COMPANY**  
of Midland, Inc.

110 W. LOUISIANA, STE. 110  
MIDLAND TEXAS, 79701  
687-0865 - (432) 687-0868 FAX

## A detailed topographic map of a region in New Mexico, centered on a rectangular area labeled "1824 STATE #81". The map features a grid of latitude and longitude lines, with various geographical features labeled. To the north, "Creek" and "Draw" are visible. To the west, "Rio" and "Pine" are labeled. To the south, "Red" and "Park" are shown. The map also includes numerous contour lines indicating elevation, and several roads or trails are marked with numbers like 1156, 1152, 1150, 1148, 1146, 1144, 1142, 1140, 1138, 1136, 1134, 1132, 1130, 1128, 1126, 1124, 1122, 1120, 1118, 1116, 1114, 1112, 1110, 1108, 1106, 1104, 1102, 1100, 1098, 1096, 1094, 1092, 1090, 1088, 1086, 1084, 1082, 1080, 1078, 1076, 1074, 1072, 1070, 1068, 1066, 1064, 1062, 1060, 1058, 1056, 1054, 1052, 1050, 1048, 1046, 1044, 1042, 1040, 1038, 1036, 1034, 1032, 1030, 1028, 1026, 1024, 1022, 1020, 1018, 1016, 1014, 1012, 1010, 1008, 1006, 1004, 1002, 1000. The map is oriented with North at the top.

SEC. 8 TWP. 18-S RGE. 24-E  
SURVEY \_\_\_\_\_ N.M.P.M. \_\_\_\_\_  
COUNTY \_\_\_\_\_ EDDY \_\_\_\_\_  
DESCRIPTION 660' FEL & 760' FSL  
ELEVATION 3778'  
OPERATOR LCX ENERGY, LLC  
LEASE 1824 STATE #81



**WEST  
COMPANY**  
of Midland, Inc.

110 W. LOUISIANA, STE. 110  
MIDLAND TEXAS, 79701  
(432) 687-0865 - (432) 687-0868 FAX

# Proposal

<b>Report Date:</b> June 2, 2006 <b>Client:</b> LCX Energy <b>Field:</b> Eddy County, NM Nad 83 <b>Structure / Slot:</b> 1824 State #81 / 1824 State #81 <b>Well:</b> 1824 State #81 <b>Borehole:</b> 1824 State #81 <b>UWI/API#:</b> <b>Survey Name / Date:</b> 1824 State #81_r1 / June 2, 2006 <b>Tort / AHD / DDI / ERD ratio:</b> 90.000° / 3974.54 ft / 5.799 / 0.801 <b>Grid Coordinate System:</b> NAD83 New Mexico State Planes, Eastern Zone, US Feet <b>Location Lat/Long:</b> N 32 45 28.045, W 104 36 15.933 <b>Location Grid N/E Y/X:</b> N 639522.700 ftUS, E 458000.400 ftUS <b>Grid Convergence Angle:</b> -0.14668595° <b>Grid Scale Factor:</b> 0.99991704	<b>Survey / DLS Computation Method:</b> Minimum Curvature / Lubinski <b>Vertical Section Azimuth:</b> 269.940° <b>Vertical Section Origin:</b> N 0.000 ft, E 0.000 ft <b>TVD Reference Datum:</b> RKB <b>TVD Reference Elevation:</b> 0.0 ft relative to <b>Sea Bed / Ground Level Elevation:</b> 0.000 ft relative to <b>Magnetic Declination:</b> 8.683° <b>Total Field Strength:</b> 49363.469 nT <b>Magnetic Dip:</b> 60.622° <b>Declination Date:</b> June 02, 2006 <b>Magnetic Declination Model:</b> IGRF 2005 <b>North Reference:</b> Grid North <b>Total Corr Mag North -&gt; Grid North:</b> +8.830° <b>Local Coordinates Referenced To:</b> Well Head
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Comments	Measured Depth (ft)	Inclination (deg)	Azimuth (deg)	TVD (ft)	Vertical Section (ft)	NS (ft)	EW (ft)	Closure (ft)	Closure Azimuth (deg)	DLS (deg/100 ft)	Tool Face (deg)
Tie-In	0.00	0.00	269.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-90.06M
KOP	4482.53	0.00	269.94	4482.53	0.00	0.00	0.00	0.00	0.00	0.00	-90.06M
	4500.00	2.10	269.94	4500.00	0.32	-0.00	-0.32	0.32	269.94	12.00	-90.06M
	4600.00	14.10	269.94	4598.82	14.38	-0.02	-14.38	14.38	269.94	12.00	0.00G
	4700.00	26.10	269.94	4692.56	48.68	-0.06	-48.68	48.68	269.94	12.00	0.00G
	4800.00	38.10	269.94	4777.12	101.71	-0.12	-101.71	101.71	269.94	12.00	0.00G
	4900.00	50.10	269.94	4848.80	171.17	-0.19	-171.17	171.17	269.94	12.00	0.00G
	5000.00	62.10	269.94	4904.48	254.02	-0.29	-254.02	254.02	269.94	12.00	0.00G
	5100.00	74.10	269.94	4941.72	346.63	-0.39	-346.63	346.63	269.94	12.00	0.00G
	5200.00	86.10	269.94	4958.89	444.96	-0.50	-444.96	444.96	269.94	12.00	0.00G
EOC	5232.53	90.00	269.94	4959.99	477.46	-0.54	-477.46	477.46	269.94	12.00	0.00G
PBHL	8729.60	90.00	269.94	4960.00	3974.54	-4.50	-3974.54	3974.54	269.94	0.00	0.00G

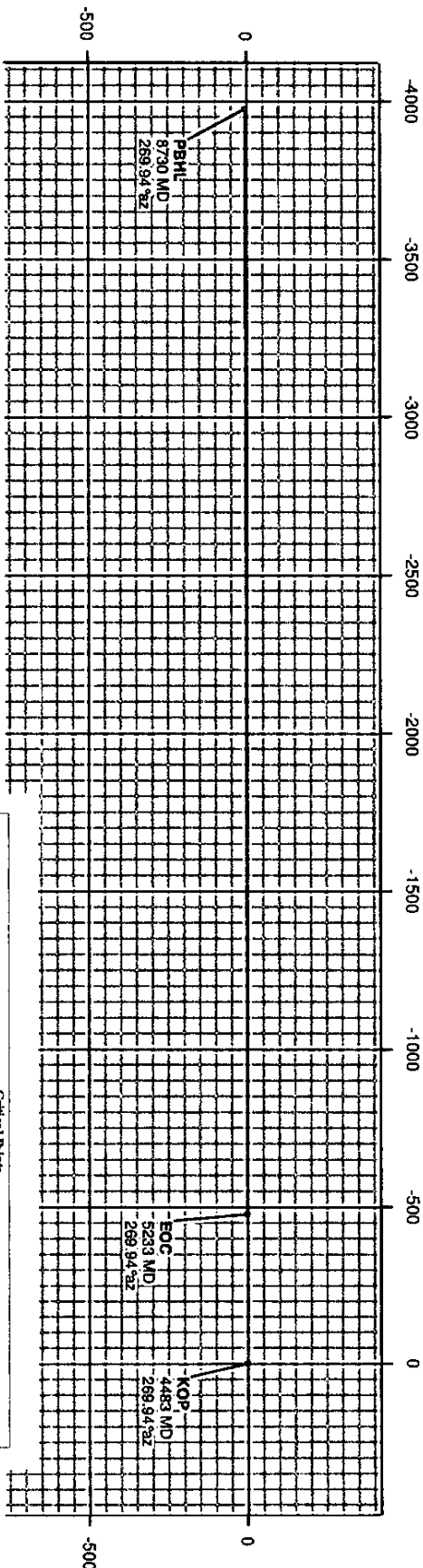
# LCX Energy

WELL 1824 State #81

FIELD Eddy County, NM Nad 83

STRUCTURE 1824 State #81

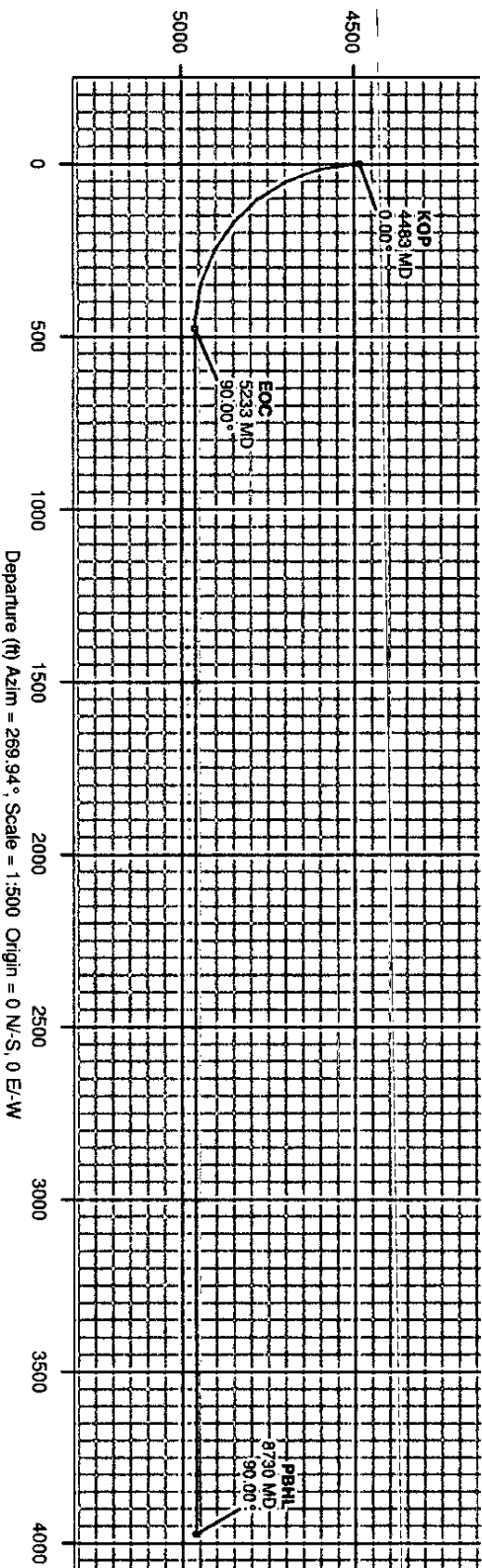
Magnum Petroleum	Drp: 80.622°	Date: June 02, 2008	Surface Location	NAD83 New Mexico State Plane, Eastern Zone, US FTM	Macrostructure	TVD Pk
Model: KOPF 2005	Mag Dip: -1.683°	FS: 48583.511	Lac: NAD 83 28 046	Grd Cont: 0.0000000	Shc: 1824 State #81	WGS 84 Azim 1
			Lat: N 18 04 28.046	Scale: 1:1241	Rev: 1824 State #81	Rev 0.0000000
			Long: W 104 36 13.833	Grd Cont: 0.0000000	Rev: 1824 State #81	Rev 0.0000000
				Scale: 1:1241	Rev: 1824 State #81	Rev 0.0000000



**INTEGRATED**  
Directional Drilling Specialists



Critical Point	MD	INCL	AZIM	TYD	YSEC	Nkt/Sg	Ect/Wt DLS
Tie-In	0.00	0.00	269.94	0.00	0.00	0.00	0.00
KOP	4482.53	0.00	269.94	4482.53	0.00	0.00	0.00
BOC	5332.33	90.00	269.94	4959.99	477.46	-0.54	-477.46
PBHL	8729.60	90.00	269.94	4960.00	3974.54	4.50	-3974.54



Departure (ft) Azim = 269.94°, Scale = 1:500 Origin = 0 N-S, 0 E-W

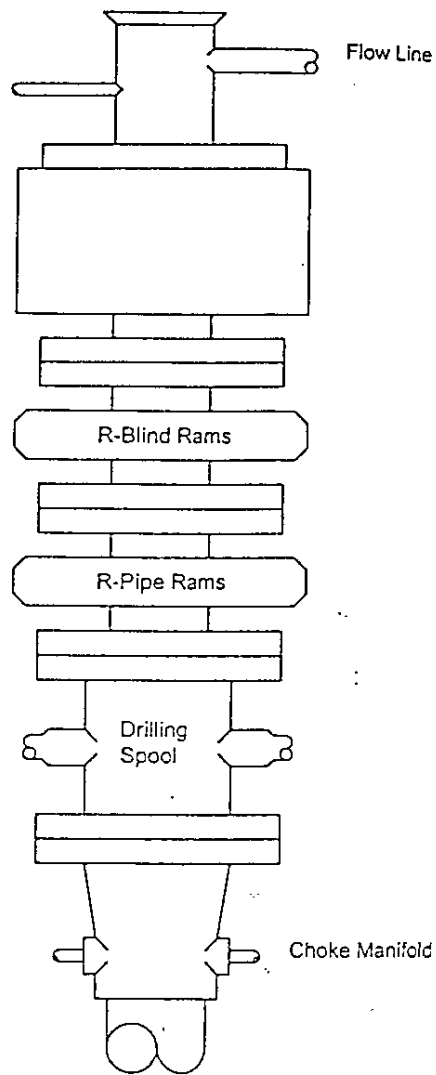


# BLOWOUT PREVENTER SYSTEM

3000 PSI

Fill Line

Flow Line



900 SERIES  
3000 PSI WP

## Choke Manifold Assembly for 5M WP System

