

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
June 16, 2008

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

¹ Operator Name and Address OGX RESOURCES, LLC. P. O. BOX 2064 MIDLAND, TEXAS 79702 ✓		² OGRID Number 217955 ✓
		³ API Number 30- 015-39105 ✓
⁴ Property Code 38527 ✓	⁵ Property Name DIAMONDBACK "22" STATE COM. ✓	
⁶ Proposed Pool 1 DELAWARE RIVER -BONE SPRING (16800)		⁷ 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
D	22	26S	28E		580'	NORTH	580'	WEST	EDDY

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	22	T26S	R28E		330'	SOUTH	330'	WEST	EDDY

Additional Well Information

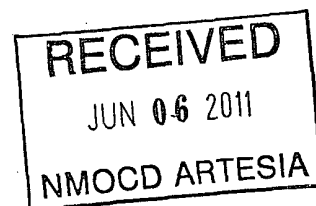
¹¹ Work Type Code N ✓	¹² Well Type Code O ✓	¹³ Cable/Rotary ROTARY ✓	¹⁴ Lease Type Code S ✓	¹⁵ Ground Level Elevation 2981.2981' ✓
¹⁶ Multiple NO ✓	¹⁷ Proposed Depth TVD-7050' MD-11,244'	¹⁸ Formation BONE SPRING ✓	¹⁹ Contractor SILVER OAK DRLG.	²⁰ Spud Date WHEN APPROVED

²¹ Proposed Casing and Cement Program

Hole Size	Casing Size	Casing weight/foot	Setting Depth	Sacks of Cement	Estimated TOC
26"	20"	Conductor	40'	Redi-mix	Surface
17 1/2"	13 3/8"	48#	425'	425 Sx.	Surface
11"	8 5/8"	32#	2525'	500 Sx.	Surface
7 7/8"	5 1/2"	17#	11,244'	1300 Sx.	Surface

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.

SEE ATTACHED SHEET FOR DETAIL



²³ I hereby certify that the information given above is true and complete to the best of my knowledge and belief.		OIL CONSERVATION DIVISION	
Signature: Joe T. Janica		Approved by: [Signature]	
Printed name: Joe T. Janica		Title: DIST JR SUPERVISOR	
Title: Permit Eng.		Approval Date: 06/07/2011	Expiration Date: 06/07/2013
E-mail Address: joejanica@valornet.com			
Date: 06/03/11	Phone: 575-391-8503	Conditions of Approval Attached ☐	

1. Drill 26" hole to 40'. Set 40' of 20" conductor pipe and cement to surface with Redi-mix.
2. Drill 17½" hole to 425'. Run and set 425' of 13 3/8" 48# H-40 ST&C casing. Cement with 225 Sx. of 35/65/6 Class "C" Premium Plus POZ cement + 6% Bentonite, + 5% Salt, + 0.7% Sodium Metasilicate, + 5# LCM/Sx. Yield 2.0. Tail in with 200 Sx. of Premium Plus Class "C" cement + 2% CaCl Yield 1.34. Circulate cement to surface.
3. Drill 11" hole to 2525'. Run and set 2525' of 8 5/8" 32# J-55 ST&C casing. Cement with 300 Sx. of 35/65 Premium Plus Class "C" POZ cement + 4% Bentonite, + 5% Salt, + 0.7% Sodium Metasilicate, + 5# LCM/Sx. Yield 2.02, tail in with 200 Sx. of Class "C" cement + 2% CaCl, Yield 1.34, circulate cement to surface.
4. Drill 7 7/8" hole to 11,092'. Run and set 11,092' of 5½" casing as follows. 4692' of 5½" 17# BT&C P-110, 6400' of 5½" 17# LT&C P-110 casing. Cement with 400 Sx. of Premium Plus Class "C" POZ cement + 4% Bentonite, + 5% Salt, + 0.7% Sodium Metasilicate, + 5# LCM/Sx. Yield 2.02, tail in with 900 Sx. of Premium Plus Class "C" cement + 2% CaCl. Yield 1.34, circulate cement to surface.

DRILLING PROGRAM**Geologic Name of Surface Formation:**

Permian

FORMATION TOPS / ANTICIPATED FRESH WATER, OIL, or GAS / PRESSURES

<u>Formation</u>	<u>Depth</u>	<u>Frm Pres</u>	<u>Remarks</u>
Basal Anhydrite	2420'	10 ppge	Drig fluid must be saturated salt water
Lamar	2600'	8.4 ppge	Base of Salt
Bell Canyon	2630'	8.4 ppge	Oil / Gas / Formation water /Poss.H ₂ S
Cherry Canyon	3500'	8.4 ppge	Oil / Gas / Formation water
Brushy Canyon	4700'	8.4 ppge	Oil / Gas / Formation water
Bone Spring	6350'	8.4 ppge	Oil / Gas / Formation water

No other formations are expected to yield oil, gas or fresh water in measurable volumes. The surface fresh water sands will be protected by setting 13 3/8" casing at 425' and circulating cement back to surface. Potash/ fresh water sands will be protected by setting 8 5/8" casing at 2525' and circulating cement to the surface. The hydrocarbon producing intervals will be isolated by setting 5 1/2" casing to total depth and circulating cement 300' above the base of the 8 5/8" casing.

CASING PROGRAM:

<u>HOLE SIZE</u>	<u>DEPTH</u>	<u>OD Csg</u>	<u>WEIGHT</u>	<u>COLLAR</u>	<u>GRADE</u>	<u>NEW/USED</u>
17 1/2"	0-425'	13 3/8"	48	STC	H40	New
11"	0-2525'	8 5/8"	32	STC	J55	New
7 7/8"	0-6400'	5 1/2"	17	LTC	P110	New
7 7/8"	6400-11092'	5 1/2"	17	BTC	P110	New

Casing weight and grades are minimum -- higher weights & better grades may be substituted

(8 5/8" 32# will be special drift to 7.921)
(5 1/2" BTC will be run thru the curve & Lateral)

<u>DEPTH</u>	<u>OD Csg</u>	<u>WEIGHT</u>	<u>factors: Burst / Collapse / Tension</u>		
0-450'	13 3/8"	48	1.65	1.52	12+
0-2525'	8 5/8"	32	1.27	1.54	3.62
0-11092'	5 1/2"	17	1.85	1.81	2.24

** The Intermediate hole will never be evacuated**

(5 1/2 Burst & Collapse Calculated @ 7200' TVD)

CEMENT PROGRAM:**13 3/8" Surface**

Spacer 50 bbls of fresh water
 Slurry Lead: 35:65:6 – Poz: Prem Plus C + 6% Bentonite + 5% salt + 5% MPA-5 + .7% Sodium Metasilicate + 5 lbs LCM + 97.9 fresh water
 Tail: Premium Plus C + 2% CaCl₂ + 56.4% Fresh Water

Cement Properties	Lead	Tail
Est Volume (sacks)	225	200
Density (ppg)	12.80	14.80
Yield (ft ³ /sx)	2.00	1.34
Mix Water, gps	10.21	6.36
Thickening Time, hrs:min		~3:30
Free Water, %		0
Fluid Loss, cc's		~850
Top of Cement	surface	

8 5/8" Intermediate

Spacer 30 bbls of fresh water
 Lead 35:65 – Poz: Prem Plus C + 4% Bentonite + 5% salt + 5% MPA-5 + .7% Sodium Metasilicate + 5 lbs LCM + 99.6% fresh water
 Tail C + 2% CaCl₂ + 56.4% fresh water

Cement Properties	Lead	Tail
Est Volume (sacks)	300	200
Density (ppg)	12.7	14.8
Yield (ft ³ /sx)	2.02	1.34
Mix Water, gps	10.39	6.36
Thickening Time, hrs:min	4:07	3:32
Free Water, %	2.0	0
Fluid Loss, cc's	~750	~600
Top of Cement	surface	

The above cement volumes will be revised pending fluid caliper measurements.

5 1/2" Production

Spacer 30 bbls of fresh water
Lead 35:65 – Poz: Prem Plus: C + 4% Bentonite + 5% salt + 5% MPA-5 + .7%
Sodium Metasilicate + 5 lbs LCM + 99.6% fresh water
Tail C + 2% CaCl₂ + 56.4% fresh water

Cement Properties

	<u>Lead</u>	<u>Tail</u>
Est Volume (sacks)	400	900
Density (ppg)	12.7	14.8
Yield (ft ³ /sx)	2.02	1.34
Mix Water, gps	10.39	6.36
Thickening Time, hrs:min	4:07	3:32
Free Water, %	2.0	0
Fluid Loss, cc's	~750	~600
Top of Cement	surface	

The above cement volumes will be revised pending fluid and open hole caliper measurements.

Kick-Off plug in Pilot Hole for Horizontal

No Plug Required

MUD PROPERTIES SUMMARY:

Depth (feet)	Weight (ppg)	Viscosity (sec/1000cc)	Fluid Loss (cc/30min)	PV (cps)	YP (lb/100ft ²)	Mud Type
0' – 425' Set 13-3/8" Casing	8.6 – 8.8	36 – 38	N/C	6 – 10	6 – 20	Spud Mud
425' – 2,525' Set 8-5/8" Casing	10.0 – 10.1	29 – 30	N/C	0 – 1	0 – 1	Brine
2,525' – 6,400'	8.4 – 9.1	28 – 29	N/C	0 – 1	0 – 1	Fresh Water
6,400' – 11,092' MD Set 5-1/2"	8.4 – 9.10	34 – 36	12 – 15	4 – 8	4 – 8	Dynazan / Starch HB 411

Auxiliary Well Control & Monitoring Equipment:

A Kelly cock will be in the drill string at all times.

A full opening drill pipe stabbing valve having the appropriate connections will be on the floor at all times.

H₂S detection equipment will be in operation after drilling out the 13 3/8" casing shoe until the 5 1/2" csg is cemented.

LOGGING, CORING, AND TESTING

No logs at surface.

Mud loggers on below 13 3/8" casing shoe – no electric logs at intermediate depth

The Vertical @ KO pt. (Production) hole will be logged: Gyro (Thru DP) & GR / Dual Laterolog / Neutron-Density / Caliper

No DST's or pressure testing is anticipated.

The horizontal lateral will be mud logged and GR via MWD.

Potential Hazards:

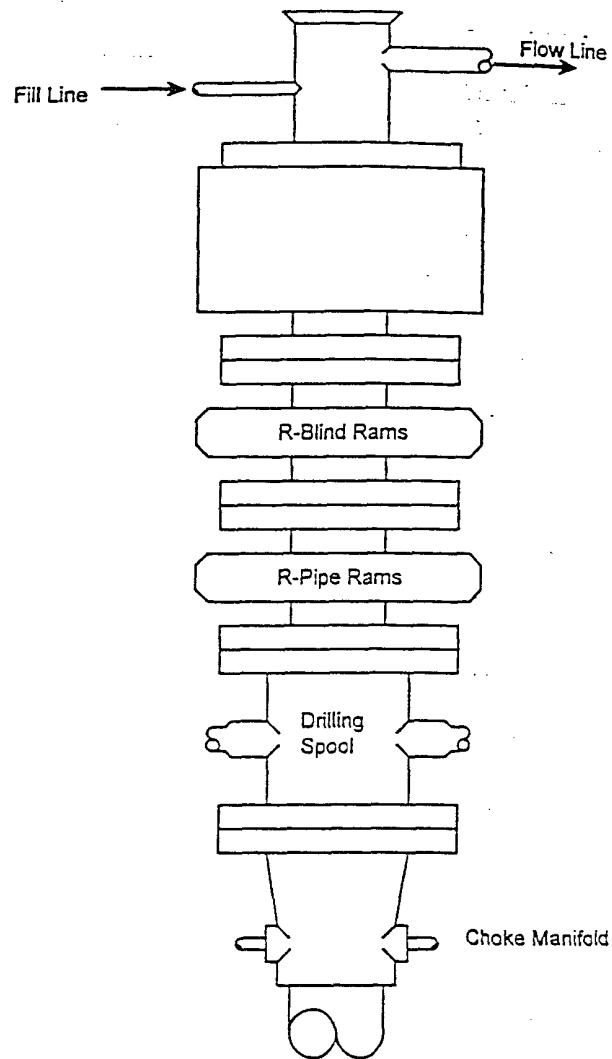
No abnormal pressures or temperatures are expected. There is no known presence of H₂S in this area. If H₂S is encountered the operator will comply with the provisions of Onshore Oil & Gas Order No.6. No loss circulation is expected to occur. All personnel will be familiar with all aspects of safe operation of equipment being used to drill this well. Estimated BHP is 3500 psi. & BHT is 125° F.

Anticipated Starting Date & Duration:

Road and location construction will begin as soon as the OCD approves the permit to drill. Movein and drilling operations will take approximately 25 days with an additional 20 days to construct production facilities.

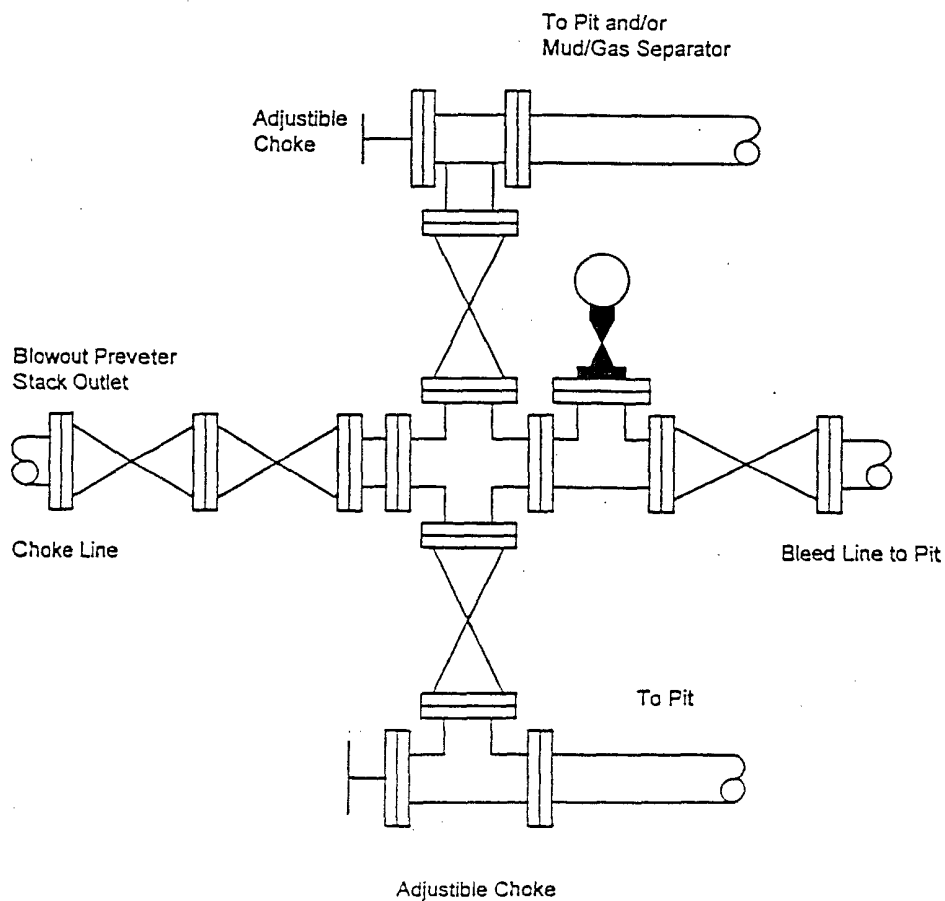
BLOWOUT PREVENTER SYSTEM

3000 PSI



Type 900 SERIES
3000 PSI WP

Choke Manifold Assembly for 5M WP System





Project: Eddy County (NAD 83)
Site: Diamondback "22" State Com
Well: #2H
Wellbore: OH
Plan: Plan #1 (#2H/OH)

PATHFINDER
A Schlumberger Company

SECTION DETAILS									
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSecl	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6591.63	0.00	0.00	6591.63	0.00	0.00	0.00	0.00	0.00	0.00
7311.63	90.00	183.02	7050.00	-457.73	-24.18	12.50	183.02	458.37	
4	11244.32	90.00	183.02	7050.00	-4384.95	-231.66	0.00	4391.06	BHL (Diamondback 2)

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)						
Name	TVD	+N/-S	+E/-W	Northing	Easting	Shape
BHL (Diamondback 2)	7050.00	-4384.95	-231.66	371658.794	619149.913	Point

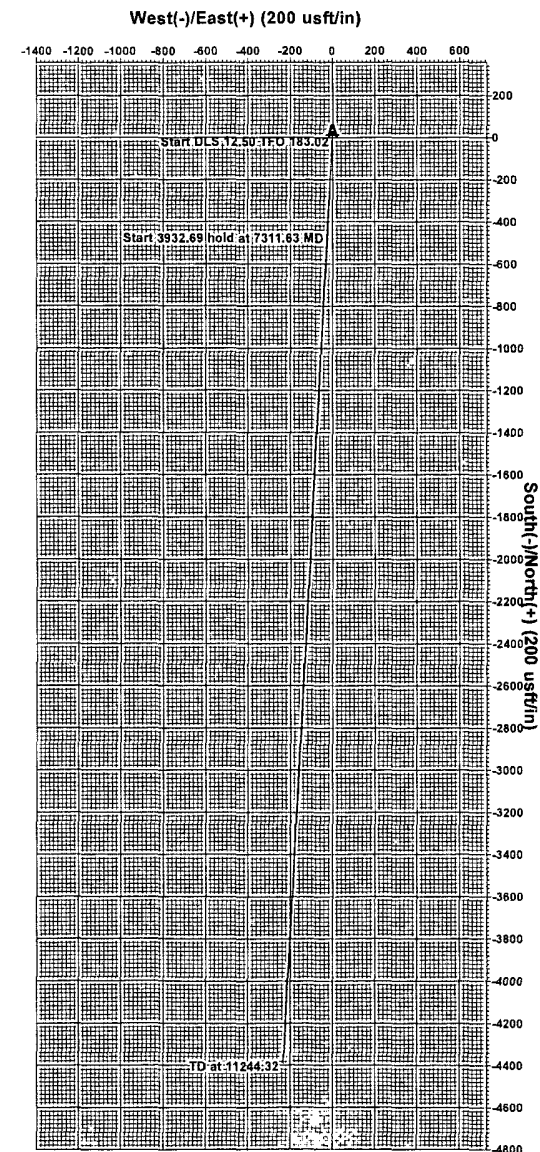
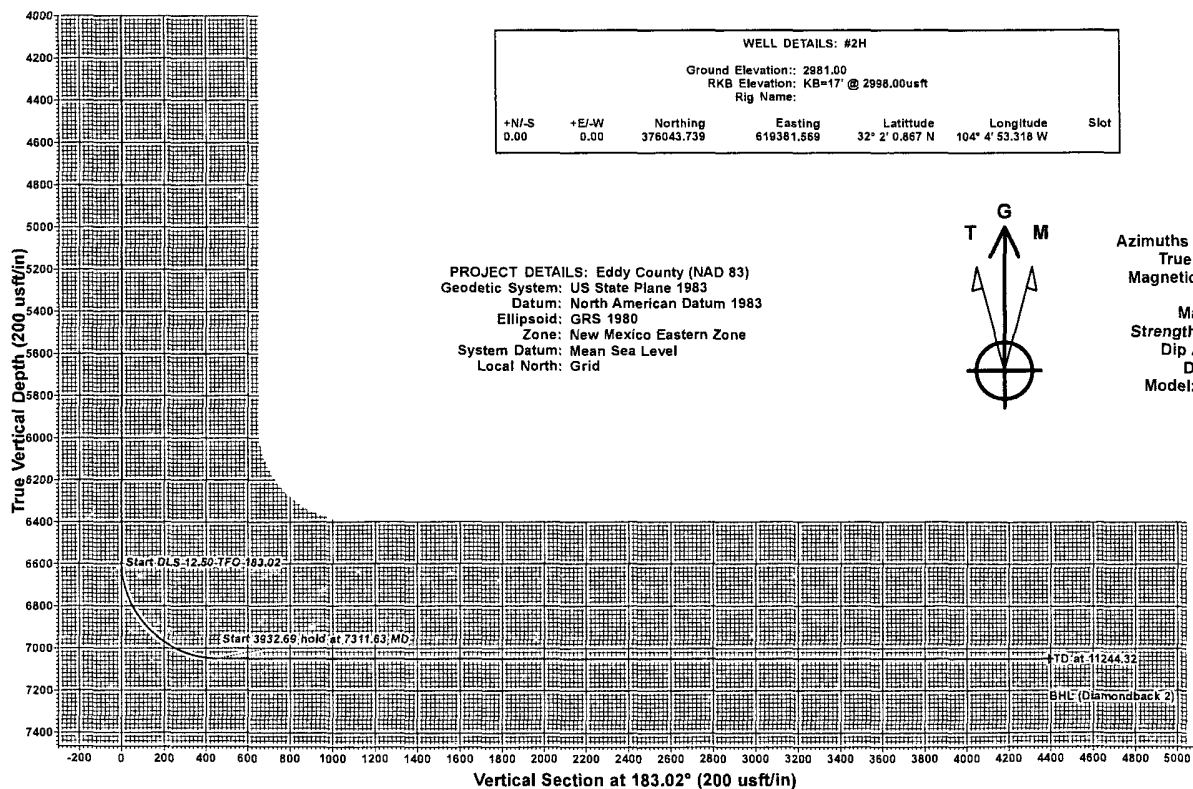
WELL DETAILS: #2H						
Ground Elevation:: 2881.00						
RKB Elevation: KB=17' @ 2998.00usft						
Rig Name:						
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	376043.739	619381.569	32° 2' 0.867 N	104° 4' 53.318 W	

PROJECT DETAILS: Eddy County (NAD 83)
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



Azimuths to Grid North
True North: -0.13°
Magnetic North: 7.66°

Magnetic Field
Strength: 48488.5snT
Dip Angle: 59.94°
Date: 6/2/2011
Model: IGRF200510





OGX Resources

Eddy County (NAD 83)

Diamondback "22" State Com

#2H

OH

Plan: Plan #1

Pathfinder X&Y Report

02 June, 2011



A Schlumberger Company



Pathfinder
Pathfinder X&Y Report

PATHFINDER
A Schlumberger Company

Company: OGX Resources
Project: Eddy County (NAD 83)
Site: Diamondback "22" State Com
Well: #2H
Wellbore: OH
Design: Plan #1

Local Co-ordinate Reference: Well #2H
TVD Reference: KB=17' @ 2998.00usft
MD Reference: KB=17' @ 2998.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Single User Db

Project	Eddy County (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	Diamondback "22" State Com		
Site Position:		Northing:	371,812.025 usft
From:	Map	Easting:	621,822.200 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 1' 18.931 N
		Longitude:	104° 4' 25.082 W
		Grid Convergence:	0.14 °

Well	#2H		
Well Position	+N/-S	0.00 usft	Northing:
	+E/-W	0.00 usft	Easting:
Position Uncertainty	0.00 usft	Wellhead Elevation:	usft
		Latitude:	32° 2' 0.867 N
		Longitude:	104° 4' 53.318 W
		Ground Level:	2,981.00 usft

Wellbore	OH		
Magnetics	Model Name	Sample Date	Declination
	IGRF200510	6/2/2011	(°)
			7.80
			Dip Angle
			(°)
			59.94
			Field Strength
			(nT)
			48,488

Design	Plan #1		
Audit Notes:			
Version:	Phase:	PLAN	Tie On Depth:
			0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.00	0.00	0.00
			Direction
			(°)
			183.02

Survey Tool Program	Date	6/2/2011		
From	To	Survey (Wellbore)	Tool Name	Description
(usft)	(usft)			
0.00	11,244.32	Plan #1 (OH)	MWD	MWD - Standard



Pathfinder
Pathfinder X&Y Report

PATHFINDER
A Schlumberger Company

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Project: Eddy County (NAD 83)
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North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Single User Db

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
0.00	0.00	0.00	0.00	-2,998.00	0.00	0.00	0.00	0.00	376,043.74	619,381.57
100.00	0.00	0.00	100.00	-2,898.00	0.00	0.00	0.00	0.00	376,043.74	619,381.57
200.00	0.00	0.00	200.00	-2,798.00	0.00	0.00	0.00	0.00	376,043.74	619,381.57
300.00	0.00	0.00	300.00	-2,698.00	0.00	0.00	0.00	0.00	376,043.74	619,381.57
400.00	0.00	0.00	400.00	-2,598.00	0.00	0.00	0.00	0.00	376,043.74	619,381.57
500.00	0.00	0.00	500.00	-2,498.00	0.00	0.00	0.00	0.00	376,043.74	619,381.57
600.00	0.00	0.00	600.00	-2,398.00	0.00	0.00	0.00	0.00	376,043.74	619,381.57
700.00	0.00	0.00	700.00	-2,298.00	0.00	0.00	0.00	0.00	376,043.74	619,381.57
800.00	0.00	0.00	800.00	-2,198.00	0.00	0.00	0.00	0.00	376,043.74	619,381.57
900.00	0.00	0.00	900.00	-2,098.00	0.00	0.00	0.00	0.00	376,043.74	619,381.57
1,000.00	0.00	0.00	1,000.00	-1,998.00	0.00	0.00	0.00	0.00	376,043.74	619,381.57
1,100.00	0.00	0.00	1,100.00	-1,898.00	0.00	0.00	0.00	0.00	376,043.74	619,381.57
1,200.00	0.00	0.00	1,200.00	-1,798.00	0.00	0.00	0.00	0.00	376,043.74	619,381.57
1,300.00	0.00	0.00	1,300.00	-1,698.00	0.00	0.00	0.00	0.00	376,043.74	619,381.57
1,400.00	0.00	0.00	1,400.00	-1,598.00	0.00	0.00	0.00	0.00	376,043.74	619,381.57
1,500.00	0.00	0.00	1,500.00	-1,498.00	0.00	0.00	0.00	0.00	376,043.74	619,381.57
1,600.00	0.00	0.00	1,600.00	-1,398.00	0.00	0.00	0.00	0.00	376,043.74	619,381.57
1,700.00	0.00	0.00	1,700.00	-1,298.00	0.00	0.00	0.00	0.00	376,043.74	619,381.57
1,800.00	0.00	0.00	1,800.00	-1,198.00	0.00	0.00	0.00	0.00	376,043.74	619,381.57
1,900.00	0.00	0.00	1,900.00	-1,098.00	0.00	0.00	0.00	0.00	376,043.74	619,381.57
2,000.00	0.00	0.00	2,000.00	-998.00	0.00	0.00	0.00	0.00	376,043.74	619,381.57
2,100.00	0.00	0.00	2,100.00	-898.00	0.00	0.00	0.00	0.00	376,043.74	619,381.57
2,200.00	0.00	0.00	2,200.00	-798.00	0.00	0.00	0.00	0.00	376,043.74	619,381.57
2,300.00	0.00	0.00	2,300.00	-698.00	0.00	0.00	0.00	0.00	376,043.74	619,381.57
2,400.00	0.00	0.00	2,400.00	-598.00	0.00	0.00	0.00	0.00	376,043.74	619,381.57
2,500.00	0.00	0.00	2,500.00	-498.00	0.00	0.00	0.00	0.00	376,043.74	619,381.57
2,600.00	0.00	0.00	2,600.00	-398.00	0.00	0.00	0.00	0.00	376,043.74	619,381.57



Pathfinder
Pathfinder X&Y Report

PATHFINDER
A Schlumberger Company

Company: OGX Resources
Project: Eddy County (NAD 83)
Site: Diamondback "22" State Com
Well: #2H
Wellbore: OH
Design: Plan #1

Local Co-ordinate Reference: Well #2H
TVD Reference: KB=17' @ 2998.00usft
MD Reference: KB=17' @ 2998.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Single User Db

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
2,700.00	0.00	0.00	2,700.00	-298.00	0.00	0.00	0.00	0.00	376,043.74	619,381.57
2,800.00	0.00	0.00	2,800.00	-198.00	0.00	0.00	0.00	0.00	376,043.74	619,381.57
2,900.00	0.00	0.00	2,900.00	-98.00	0.00	0.00	0.00	0.00	376,043.74	619,381.57
3,000.00	0.00	0.00	3,000.00	2.00	0.00	0.00	0.00	0.00	376,043.74	619,381.57
3,100.00	0.00	0.00	3,100.00	102.00	0.00	0.00	0.00	0.00	376,043.74	619,381.57
3,200.00	0.00	0.00	3,200.00	202.00	0.00	0.00	0.00	0.00	376,043.74	619,381.57
3,300.00	0.00	0.00	3,300.00	302.00	0.00	0.00	0.00	0.00	376,043.74	619,381.57
3,400.00	0.00	0.00	3,400.00	402.00	0.00	0.00	0.00	0.00	376,043.74	619,381.57
3,500.00	0.00	0.00	3,500.00	502.00	0.00	0.00	0.00	0.00	376,043.74	619,381.57
3,600.00	0.00	0.00	3,600.00	602.00	0.00	0.00	0.00	0.00	376,043.74	619,381.57
3,700.00	0.00	0.00	3,700.00	702.00	0.00	0.00	0.00	0.00	376,043.74	619,381.57
3,800.00	0.00	0.00	3,800.00	802.00	0.00	0.00	0.00	0.00	376,043.74	619,381.57
3,900.00	0.00	0.00	3,900.00	902.00	0.00	0.00	0.00	0.00	376,043.74	619,381.57
4,000.00	0.00	0.00	4,000.00	1,002.00	0.00	0.00	0.00	0.00	376,043.74	619,381.57
4,100.00	0.00	0.00	4,100.00	1,102.00	0.00	0.00	0.00	0.00	376,043.74	619,381.57
4,200.00	0.00	0.00	4,200.00	1,202.00	0.00	0.00	0.00	0.00	376,043.74	619,381.57
4,300.00	0.00	0.00	4,300.00	1,302.00	0.00	0.00	0.00	0.00	376,043.74	619,381.57
4,400.00	0.00	0.00	4,400.00	1,402.00	0.00	0.00	0.00	0.00	376,043.74	619,381.57
4,500.00	0.00	0.00	4,500.00	1,502.00	0.00	0.00	0.00	0.00	376,043.74	619,381.57
4,600.00	0.00	0.00	4,600.00	1,602.00	0.00	0.00	0.00	0.00	376,043.74	619,381.57
4,700.00	0.00	0.00	4,700.00	1,702.00	0.00	0.00	0.00	0.00	376,043.74	619,381.57
4,800.00	0.00	0.00	4,800.00	1,802.00	0.00	0.00	0.00	0.00	376,043.74	619,381.57
4,900.00	0.00	0.00	4,900.00	1,902.00	0.00	0.00	0.00	0.00	376,043.74	619,381.57
5,000.00	0.00	0.00	5,000.00	2,002.00	0.00	0.00	0.00	0.00	376,043.74	619,381.57
5,100.00	0.00	0.00	5,100.00	2,102.00	0.00	0.00	0.00	0.00	376,043.74	619,381.57
5,200.00	0.00	0.00	5,200.00	2,202.00	0.00	0.00	0.00	0.00	376,043.74	619,381.57
5,300.00	0.00	0.00	5,300.00	2,302.00	0.00	0.00	0.00	0.00	376,043.74	619,381.57



Pathfinder
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PATHFINDER
A Schlumberger Company

Company: OGX Resources
Project: Eddy County (NAD 83)
Site: Diamondback "22" State Com
Well: #2H
Wellbore: OH
Design: Plan #1

Local Co-ordinate Reference: Well #2H
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MD Reference: KB=17' @ 2998.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Single User Db

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
5,400.00	0.00	0.00	5,400.00	2,402.00	0.00	0.00	0.00	0.00	376,043.74	619,381.57
5,500.00	0.00	0.00	5,500.00	2,502.00	0.00	0.00	0.00	0.00	376,043.74	619,381.57
5,600.00	0.00	0.00	5,600.00	2,602.00	0.00	0.00	0.00	0.00	376,043.74	619,381.57
5,700.00	0.00	0.00	5,700.00	2,702.00	0.00	0.00	0.00	0.00	376,043.74	619,381.57
5,800.00	0.00	0.00	5,800.00	2,802.00	0.00	0.00	0.00	0.00	376,043.74	619,381.57
5,900.00	0.00	0.00	5,900.00	2,902.00	0.00	0.00	0.00	0.00	376,043.74	619,381.57
6,000.00	0.00	0.00	6,000.00	3,002.00	0.00	0.00	0.00	0.00	376,043.74	619,381.57
6,100.00	0.00	0.00	6,100.00	3,102.00	0.00	0.00	0.00	0.00	376,043.74	619,381.57
6,200.00	0.00	0.00	6,200.00	3,202.00	0.00	0.00	0.00	0.00	376,043.74	619,381.57
6,300.00	0.00	0.00	6,300.00	3,302.00	0.00	0.00	0.00	0.00	376,043.74	619,381.57
6,400.00	0.00	0.00	6,400.00	3,402.00	0.00	0.00	0.00	0.00	376,043.74	619,381.57
6,500.00	0.00	0.00	6,500.00	3,502.00	0.00	0.00	0.00	0.00	376,043.74	619,381.57
6,591.63	0.00	0.00	6,591.63	3,593.63	0.00	0.00	0.00	0.00	376,043.74	619,381.57
6,600.00	1.05	183.02	6,600.00	3,602.00	-0.08	0.00	0.08	12.50	376,043.66	619,381.56
6,625.00	4.17	183.02	6,624.97	3,626.97	-1.21	-0.06	1.21	12.50	376,042.53	619,381.50
6,650.00	7.30	183.02	6,649.84	3,651.84	-3.71	-0.20	3.71	12.50	376,040.03	619,381.37
6,675.00	10.42	183.02	6,674.54	3,676.54	-7.55	-0.40	7.56	12.50	376,036.19	619,381.17
6,700.00	13.55	183.02	6,698.99	3,700.99	-12.73	-0.67	12.75	12.50	376,031.01	619,380.90
6,725.00	16.67	183.02	6,723.13	3,725.13	-19.24	-1.02	19.27	12.50	376,024.50	619,380.55
6,750.00	19.80	183.02	6,746.87	3,748.87	-27.05	-1.43	27.09	12.50	376,016.69	619,380.14
6,775.00	22.92	183.02	6,770.15	3,772.15	-36.14	-1.91	36.19	12.50	376,007.60	619,379.66
6,800.00	26.05	183.02	6,792.90	3,794.90	-46.49	-2.46	46.55	12.50	375,997.25	619,379.11
6,825.00	29.17	183.02	6,815.05	3,817.05	-58.06	-3.07	58.14	12.50	375,985.68	619,378.50
6,850.00	32.30	183.02	6,836.53	3,838.53	-70.81	-3.74	70.91	12.50	375,972.93	619,377.83
6,875.00	35.42	183.02	6,857.29	3,859.29	-84.72	-4.48	84.84	12.50	375,959.02	619,377.09
6,900.00	38.55	183.02	6,877.26	3,879.26	-99.74 ✓	-5.27	99.88	12.50	375,944.00	619,376.30
6,925.00	41.67	183.02	6,896.38	3,898.38	-115.82	-6.12	115.98	12.50	375,927.92	619,375.45



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Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
6,950.00	44.80	183.02	6,914.59	3,916.59	-132.92	-7.02	133.10	12.50	375,910.82	619,374.55
6,975.00	47.92	183.02	6,931.84	3,933.84	-150.98	-7.98	151.19	12.50	375,892.76	619,373.59
7,000.00	51.05	183.02	6,948.08	3,950.08	-169.96	-8.98	170.19	12.50	375,873.78	619,372.59
7,025.00	54.17	183.02	6,963.26	3,965.26	-189.79	-10.03	190.05	12.50	375,853.95	619,371.54
7,050.00	57.30	183.02	6,977.33	3,979.33	-210.42	-11.12	210.71	12.50	375,833.32	619,370.45
7,075.00	60.42	183.02	6,990.26	3,992.26	-231.78	-12.25	232.11	12.50	375,811.95	619,369.32
7,100.00	63.55	183.02	7,002.00	4,004.00	-253.82	-13.41	254.18	12.50	375,789.92	619,368.16
7,125.00	66.67	183.02	7,012.52	4,014.52	-276.46	-14.61	276.85	12.50	375,767.27	619,366.96
7,150.00	69.80	183.02	7,021.79	4,023.79	-299.65	-15.83	300.07	12.50	375,744.09	619,365.74
7,175.00	72.92	183.02	7,029.78	4,031.78	-323.30	-17.08	323.75	12.50	375,720.44	619,364.49
7,200.00	76.05	183.02	7,036.47	4,038.47	-347.35	-18.35	347.84	12.50	375,696.39	619,363.22
7,225.00	79.17	183.02	7,041.83	4,043.83	-371.73	-19.64	372.25	12.50	375,672.01	619,361.93
7,250.00	82.30	183.02	7,045.86	4,047.86	-396.37	-20.94	396.92	12.50	375,647.37	619,360.63
7,275.00	85.42	183.02	7,048.53	4,050.53	-421.19	-22.25	421.78	12.50	375,622.55	619,359.32
7,300.00	88.55	183.02	7,049.85	4,051.85	-446.12	-23.57	446.74	12.50	375,597.62	619,358.00
7,311.63	90.00	183.02	7,050.00	4,052.00	-457.73	-24.18	458.37	12.50	375,586.01	619,357.39
7,400.00	90.00	183.02	7,050.00	4,052.00	-545.97	-28.84	546.74	0.00	375,497.76	619,352.73
7,500.00	90.00	183.02	7,050.00	4,052.00	-645.84	-34.12	646.74	0.00	375,397.90	619,347.45
7,600.00	90.00	183.02	7,050.00	4,052.00	-745.70	-39.40	746.74	0.00	375,298.04	619,342.17
7,700.00	90.00	183.02	7,050.00	4,052.00	-845.56	-44.67	846.74	0.00	375,198.18	619,336.90
7,800.00	90.00	183.02	7,050.00	4,052.00	-945.42	-49.95	946.74	0.00	375,098.32	619,331.62
7,900.00	90.00	183.02	7,050.00	4,052.00	-1,045.28	-55.22	1,046.74	0.00	374,998.46	619,326.35
8,000.00	90.00	183.02	7,050.00	4,052.00	-1,145.14	-60.50	1,146.74	0.00	374,898.60	619,321.07
8,100.00	90.00	183.02	7,050.00	4,052.00	-1,245.00	-65.77	1,246.74	0.00	374,798.74	619,315.80
8,200.00	90.00	183.02	7,050.00	4,052.00	-1,344.86	-71.05	1,346.74	0.00	374,698.88	619,310.52
8,300.00	90.00	183.02	7,050.00	4,052.00	-1,444.72	-76.32	1,446.74	0.00	374,599.02	619,305.24
8,400.00	90.00	183.02	7,050.00	4,052.00	-1,544.58	-81.60	1,546.74	0.00	374,499.16	619,299.97



Pathfinder
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Design: Plan #1

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MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
8,500.00	90.00	183.02	7,050.00	4,052.00	-1,644.44	-86.88	1,646.74	0.00	374,399.30	619,294.69
8,600.00	90.00	183.02	7,050.00	4,052.00	-1,744.30	-92.15	1,746.74	0.00	374,299.44	619,289.42
8,700.00	90.00	183.02	7,050.00	4,052.00	-1,844.16	-97.43	1,846.74	0.00	374,199.57	619,284.14
8,800.00	90.00	183.02	7,050.00	4,052.00	-1,944.03	-102.70	1,946.74	0.00	374,099.71	619,278.87
8,900.00	90.00	183.02	7,050.00	4,052.00	-2,043.89	-107.98	2,046.74	0.00	373,999.85	619,273.59
9,000.00	90.00	183.02	7,050.00	4,052.00	-2,143.75	-113.25	2,146.74	0.00	373,899.99	619,268.32
9,100.00	90.00	183.02	7,050.00	4,052.00	-2,243.61	-118.53	2,246.74	0.00	373,800.13	619,263.04
9,200.00	90.00	183.02	7,050.00	4,052.00	-2,343.47	-123.81	2,346.74	0.00	373,700.27	619,257.76
9,300.00	90.00	183.02	7,050.00	4,052.00	-2,443.33	-129.08	2,446.74	0.00	373,600.41	619,252.49
9,400.00	90.00	183.02	7,050.00	4,052.00	-2,543.19	-134.36	2,546.74	0.00	373,500.55	619,247.21
9,500.00	90.00	183.02	7,050.00	4,052.00	-2,643.05	-139.63	2,646.74	0.00	373,400.69	619,241.94
9,600.00	90.00	183.02	7,050.00	4,052.00	-2,742.91	-144.91	2,746.74	0.00	373,300.83	619,236.66
9,700.00	90.00	183.02	7,050.00	4,052.00	-2,842.77	-150.18	2,846.74	0.00	373,200.97	619,231.39
9,800.00	90.00	183.02	7,050.00	4,052.00	-2,942.63	-155.46	2,946.74	0.00	373,101.11	619,226.11
9,900.00	90.00	183.02	7,050.00	4,052.00	-3,042.49	-160.73	3,046.74	0.00	373,001.25	619,220.83
10,000.00	90.00	183.02	7,050.00	4,052.00	-3,142.35	-166.01	3,146.74	0.00	372,901.38	619,215.56
10,100.00	90.00	183.02	7,050.00	4,052.00	-3,242.21	-171.29	3,246.74	0.00	372,801.52	619,210.28
10,200.00	90.00	183.02	7,050.00	4,052.00	-3,342.08	-176.56	3,346.74	0.00	372,701.66	619,205.01
10,300.00	90.00	183.02	7,050.00	4,052.00	-3,441.94	-181.84	3,446.74	0.00	372,601.80	619,199.73
10,400.00	90.00	183.02	7,050.00	4,052.00	-3,541.80	-187.11	3,546.74	0.00	372,501.94	619,194.46
10,500.00	90.00	183.02	7,050.00	4,052.00	-3,641.66	-192.39	3,646.74	0.00	372,402.08	619,189.18
10,600.00	90.00	183.02	7,050.00	4,052.00	-3,741.52	-197.66	3,746.74	0.00	372,302.22	619,183.91
10,700.00	90.00	183.02	7,050.00	4,052.00	-3,841.38	-202.94	3,846.74	0.00	372,202.36	619,178.63
10,800.00	90.00	183.02	7,050.00	4,052.00	-3,941.24	-208.22	3,946.74	0.00	372,102.50	619,173.35
10,900.00	90.00	183.02	7,050.00	4,052.00	-4,041.10	-213.49	4,046.74	0.00	372,002.64	619,168.08
11,000.00	90.00	183.02	7,050.00	4,052.00	-4,140.96	-218.77	4,146.74	0.00	371,902.78	619,162.80
11,100.00	90.00	183.02	7,050.00	4,052.00	-4,240.82	-224.04	4,246.74	0.00	371,802.92	619,157.53



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11,200.00	90.00	183.02	7,050.00	4,052.00	-4,340.68	-229.32	4,346.74	0.00	371,703.06	619,152.25
11,244.32	90.00	183.02	7,050.00	4,052.00	-4,384.95	-231.66	4,391.06	0.00	371,658.79	619,149.91

Checked By: _____ Approved By: _____ Date: _____