

Directions: From intersection of Catfish road, Go east 2

SANDS/ MARKERS	DEPTHS FROM KB		CASING PROFILE	HOLE SIZE	CASING DETAILS	MUD WT. TYPE	CEMENT DETAILS	OPEN HOLE LOGGING/CORING	DIRECTIONAL
	MD	TVD							
	60	60			20" Casing Preset @ ± 60'				
Surface Casing Point	400	400		17-1/2"	13-3/8", 54.5# J-55, STC	Fresh Water	Cement to Surface 100% Excess See Cement Recommendation	None	Totco Inclination Surveys Not to Exceed 500' Drop Gyro
Base of Salt	2,490	2,490		12-1/4"	9-5/8", 36# J-55, LTC	10 ppg Brine	Cement to Surface 50% Excess See Cement Recommendation	Mud Logger 2500' to TD	Run Steerable BHA with MWD
Inter. Casing Point I	2,750	2,750		8-3/4"		9.3 ppg Brine	50% Excess Top of cement to 2307' 500' overlap inside 9-5/8" Casing		Run Steerable BHA with MWD/GR
Cherry Canyon	3,602	3,602							
Brushy Canyon	4,801	4,801							
Bone Springs	6,430	6,430							
1st Bone Springs	7,350	7,350							
2nd Bone Springs	7,860	7,860					Top of tail cement on 7" casing @ 8025'		
3rd Bone Springs	9,240	9,240							
KOP	9522'	9522'		9475'	Top of 4-1/2" liner		Cement to top of Liner		KOP 12.0°/100' Bull to 359.89° Azm
Wolfcamp	9,640	9,640						CHL/FDC DLL/SFL	
Inter. Casing Pt II Set 7" CASING AT 60"	10,025	9,937		8-3/4"	7", 29# HCP-110, BTC	9.3 ppg - 9.5 ppg Oil Base Mud 9.5-11.0	See Cement Recommendation 25% excess See Cement Recommendation	MWD & GR Curve	Finish Curve with 12 degrees/100'
				6-1/8"					Casing Set at 60° Inc MWD Surveys Not to Exceed 100'
EOC	10,272	10,000							
				6-1/8"	4-1/2", 11.6# HCP-110, BTC	Lateral 9.5 ppg - 11.0 ppg	16,766 MD TD 10,000 TVD	MWD & GR Lateral	

NOT TO SCALE

Date: 10/24/2015
Revised Date:

EXHIBIT

Project: Eddy County, New Mexico (NAD83)
 Site: Littlefield 33 Federal Com
 Well: 1H
 Wellbore: OH
 Design: Plan 1 10-20-16
 Rig: TBD



Map System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone Name: New Mexico Eastern Zone
Local Origin: Well 1H, Grid North
Latitude: 32° 0' 3.75412 N
Longitude: 103° 59' 16.91482 W
Grid East: 648375.90
Grid North: 364289.80
Scale Factor: 1.000
Geomagnetic Model: IGRF2010_14
Sample Date: 20-Oct-16
Magnetic Declination: 7.10°
Dip Angle from Horizontal: 59.78°
Magnetic Field Strength: 47908
Azimuths to Grid North:
 True North: -0.18°
 Magnetic North: 6.92°

Map System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone Name: New Mexico Eastern Zone
Local Origin: Well 1H, Grid North
Latitude: 32° 0' 3.75412 N
Longitude: 103° 59' 16.91482 W
Grid East: 648375.90
Grid North: 364289.80
Scale Factor: 1.000
Geomagnetic Model: IGRF2010_14
Sample Date: 20-Oct-16
Magnetic Declination: 7.10°
Dip Angle from Horizontal: 59.78°
Magnetic Field Strength: 47908
To convert a Magnetic Direction to a Grid Direction, Add 6.92°
To convert a Magnetic Direction to a True Direction, Add 7.10° East
To convert a True Direction to a Grid Direction, Subtract 0.18°

LEGEND

2H, OH, Plan 3 10-04-16 V0
 Plan 1 10-20-16

WELL DETAILS

+N/-S	+E/-W	Northing	Eastings	Latitude	Longitude
0.00	0.00	364289.80	648375.90	32° 0' 3.75412 N	103° 59' 16.91482 W

DESIGN TARGET DETAILS

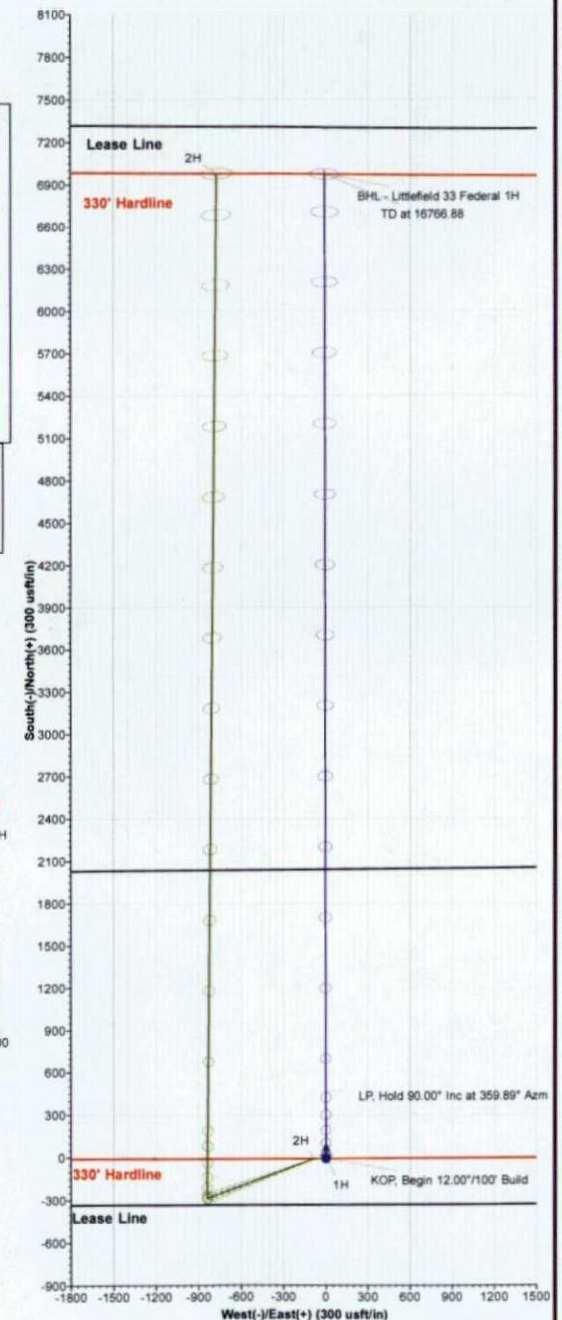
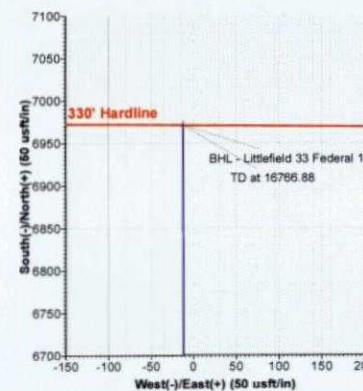
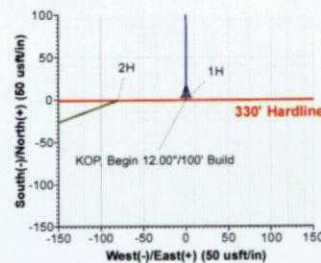
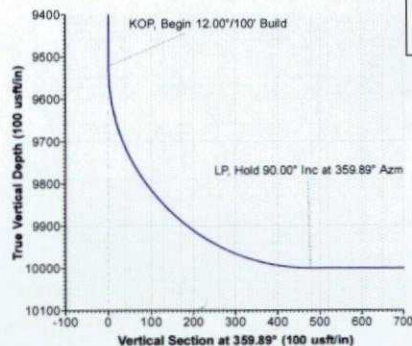
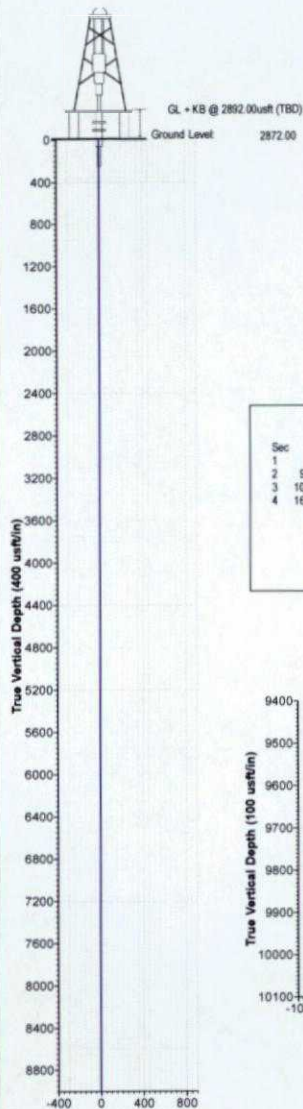
Name	TVD	+N/-S	+E/-W	Northing	Eastings	Latitude	Longitude
BHL - Littlefield 33 Federal 1H	10000.00	6971.80	-13.30	371261.60	648362.60	32° 1' 12.74900 N	103° 59' 16.81060 W

SECTION DETAILS

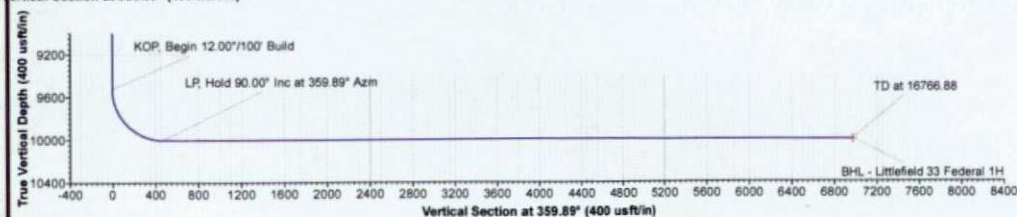
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSecl	Target	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
2	9522.54	0.00	0.00	9522.54	0.00	0.00	0.00	0.00	0.00		KOP, Begin 12.00°/100' Build
3	10272.54	90.00	359.89	10000.00	477.46	-0.91	12.00	359.89	477.46		LP, Hold 90.00° Inc at 359.89° Azm
4	16766.88	90.00	359.89	10000.00	6971.80	-13.30	0.00	0.00	6971.81	BHL - Littlefield 33 Federal 1H	TD at 16766.88

FORMATION TOP DETAILS

No formation data is available



Vertical Section at 359.89° (400 usft/in)



OGX Operating LLC

Eddy County, New Mexico (NAD83)

Littlefield 33 Federal Com

1H

OH

Plan: Plan 1 10-20-16

Standard Planning Report

20 October, 2016



Phoenix Technology Services LP

Planning Report



Database:	Compass 5000 GCR	Local Co-ordinate Reference:	Well 1H
Company:	OGX Operating LLC	TVD Reference:	GL + KB @ 2892.00usft (TBD)
Project:	Eddy County, New Mexico (NAD83)	MD Reference:	GL + KB @ 2892.00usft (TBD)
Site:	Littlefield 33 Federal Com	North Reference:	Grid
Well:	1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 1 10-20-16		

Project	Eddy County, New Mexico (NAD83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site		Littlefield 33 Federal Com			
Site Position:		Northing:	364,289.60 usft	Latitude:	32° 0' 3.75467 N
From:	Map	Easting:	648,296.00 usft	Longitude:	103° 59' 17.84273 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.18 °

Well	1H					
Well Position	+N/-S	0.20 usft	Northing:	364,289.80 usft	Latitude:	32° 0' 3.75412 N
	+E/-W	79.90 usft	Easting:	648,375.90 usft	Longitude:	103° 59' 16.91482 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	2,872.00 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010_14	10/20/2016	7.10	59.78	47,908

Design	Plan 1 10-20-16			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	359.89

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
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
9,522.54	0.00	0.00	9,522.54	0.00	0.00	0.00	0.00	0.00	0.00	
10,272.54	90.00	359.89	10,000.00	477.46	-0.91	12.00	12.00	0.00	359.89	
16,766.88	90.00	359.89	10,000.00	6,971.80	-13.30	0.00	0.00	0.00	0.00	BHL - Littlefield 33 I

Phoenix Technology Services LP

Planning Report



Database:	Compass 5000 GCR	Local Co-ordinate Reference:	Well 1H
Company:	OGX Operating LLC	TVD Reference:	GL + KB @ 2892.00usft (TBD)
Project:	Eddy County, New Mexico (NAD83)	MD Reference:	GL + KB @ 2892.00usft (TBD)
Site:	Littlefield 33 Federal Com	North Reference:	Grid
Well:	1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 1 10-20-16		

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)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9,522.54	0.00	0.00	9,522.54	0.00	0.00	0.00	0.00	0.00	0.00
KOP, Begin 12.00°/100' Build									
9,600.00	9.30	359.89	9,599.66	6.27	-0.01	6.27	12.00	12.00	0.00
9,700.00	21.30	359.89	9,695.94	32.60	-0.06	32.60	12.00	12.00	0.00
9,800.00	33.30	359.89	9,784.65	78.38	-0.15	78.38	12.00	12.00	0.00
9,900.00	45.30	359.89	9,861.89	141.59	-0.27	141.59	12.00	12.00	0.00
10,000.00	57.30	359.89	9,924.31	219.49	-0.42	219.49	12.00	12.00	0.00
10,100.00	69.30	359.89	9,969.16	308.66	-0.59	308.66	12.00	12.00	0.00
10,200.00	81.30	359.89	9,994.50	405.21	-0.77	405.21	12.00	12.00	0.00
10,272.54	90.00	359.89	10,000.00	477.46	-0.91	477.46	12.00	12.00	0.00
LP, Hold 90.00° Inc at 359.89° Azm									
10,300.00	90.00	359.89	10,000.00	504.93	-0.96	504.93	0.00	0.00	0.00
10,400.00	90.00	359.89	10,000.00	604.93	-1.15	604.93	0.00	0.00	0.00
10,500.00	90.00	359.89	10,000.00	704.93	-1.34	704.93	0.00	0.00	0.00
10,600.00	90.00	359.89	10,000.00	804.93	-1.54	804.93	0.00	0.00	0.00
10,700.00	90.00	359.89	10,000.00	904.93	-1.73	904.93	0.00	0.00	0.00
10,800.00	90.00	359.89	10,000.00	1,004.93	-1.92	1,004.93	0.00	0.00	0.00
10,900.00	90.00	359.89	10,000.00	1,104.93	-2.11	1,104.93	0.00	0.00	0.00
11,000.00	90.00	359.89	10,000.00	1,204.93	-2.30	1,204.93	0.00	0.00	0.00
11,100.00	90.00	359.89	10,000.00	1,304.93	-2.49	1,304.93	0.00	0.00	0.00
11,200.00	90.00	359.89	10,000.00	1,404.93	-2.68	1,404.93	0.00	0.00	0.00
11,300.00	90.00	359.89	10,000.00	1,504.93	-2.87	1,504.93	0.00	0.00	0.00
11,400.00	90.00	359.89	10,000.00	1,604.93	-3.06	1,604.93	0.00	0.00	0.00
11,500.00	90.00	359.89	10,000.00	1,704.93	-3.25	1,704.93	0.00	0.00	0.00
11,600.00	90.00	359.89	10,000.00	1,804.93	-3.44	1,804.93	0.00	0.00	0.00
11,700.00	90.00	359.89	10,000.00	1,904.93	-3.63	1,904.93	0.00	0.00	0.00
11,800.00	90.00	359.89	10,000.00	2,004.93	-3.82	2,004.93	0.00	0.00	0.00
11,900.00	90.00	359.89	10,000.00	2,104.93	-4.02	2,104.93	0.00	0.00	0.00
12,000.00	90.00	359.89	10,000.00	2,204.93	-4.21	2,204.93	0.00	0.00	0.00
12,100.00	90.00	359.89	10,000.00	2,304.93	-4.40	2,304.93	0.00	0.00	0.00
12,200.00	90.00	359.89	10,000.00	2,404.93	-4.59	2,404.93	0.00	0.00	0.00
12,300.00	90.00	359.89	10,000.00	2,504.93	-4.78	2,504.93	0.00	0.00	0.00
12,400.00	90.00	359.89	10,000.00	2,604.92	-4.97	2,604.93	0.00	0.00	0.00
12,500.00	90.00	359.89	10,000.00	2,704.92	-5.16	2,704.93	0.00	0.00	0.00
12,600.00	90.00	359.89	10,000.00	2,804.92	-5.35	2,804.93	0.00	0.00	0.00
12,700.00	90.00	359.89	10,000.00	2,904.92	-5.54	2,904.93	0.00	0.00	0.00
12,800.00	90.00	359.89	10,000.00	3,004.92	-5.73	3,004.93	0.00	0.00	0.00
12,900.00	90.00	359.89	10,000.00	3,104.92	-5.92	3,104.93	0.00	0.00	0.00
13,000.00	90.00	359.89	10,000.00	3,204.92	-6.11	3,204.93	0.00	0.00	0.00
13,100.00	90.00	359.89	10,000.00	3,304.92	-6.30	3,304.93	0.00	0.00	0.00
13,200.00	90.00	359.89	10,000.00	3,404.92	-6.50	3,404.93	0.00	0.00	0.00
13,300.00	90.00	359.89	10,000.00	3,504.92	-6.69	3,504.93	0.00	0.00	0.00
13,400.00	90.00	359.89	10,000.00	3,604.92	-6.88	3,604.93	0.00	0.00	0.00
13,500.00	90.00	359.89	10,000.00	3,704.92	-7.07	3,704.93	0.00	0.00	0.00
13,600.00	90.00	359.89	10,000.00	3,804.92	-7.26	3,804.93	0.00	0.00	0.00
13,700.00	90.00	359.89	10,000.00	3,904.92	-7.45	3,904.93	0.00	0.00	0.00
13,800.00	90.00	359.89	10,000.00	4,004.92	-7.64	4,004.93	0.00	0.00	0.00
13,900.00	90.00	359.89	10,000.00	4,104.92	-7.83	4,104.93	0.00	0.00	0.00
14,000.00	90.00	359.89	10,000.00	4,204.92	-8.02	4,204.93	0.00	0.00	0.00
14,100.00	90.00	359.89	10,000.00	4,304.92	-8.21	4,304.93	0.00	0.00	0.00
14,200.00	90.00	359.89	10,000.00	4,404.92	-8.40	4,404.93	0.00	0.00	0.00
14,300.00	90.00	359.89	10,000.00	4,504.92	-8.59	4,504.93	0.00	0.00	0.00
14,400.00	90.00	359.89	10,000.00	4,604.92	-8.78	4,604.93	0.00	0.00	0.00

Phoenix Technology Services LP

Planning Report



Database:	Compass 5000 GCR	Local Co-ordinate Reference:	Well 1H
Company:	OGX Operating LLC	TVD Reference:	GL + KB @ 2892.00usft (TBD)
Project:	Eddy County, New Mexico (NAD83)	MD Reference:	GL + KB @ 2892.00usft (TBD)
Site:	Littlefield 33 Federal Corn	North Reference:	Grid
Well:	1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 1 10-20-16		

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)
14,500.00	90.00	359.89	10,000.00	4,704.92	-8.98	4,704.93	0.00	0.00	0.00
14,600.00	90.00	359.89	10,000.00	4,804.92	-9.17	4,804.93	0.00	0.00	0.00
14,700.00	90.00	359.89	10,000.00	4,904.92	-9.36	4,904.93	0.00	0.00	0.00
14,800.00	90.00	359.89	10,000.00	5,004.92	-9.55	5,004.93	0.00	0.00	0.00
14,900.00	90.00	359.89	10,000.00	5,104.92	-9.74	5,104.93	0.00	0.00	0.00
15,000.00	90.00	359.89	10,000.00	5,204.92	-9.93	5,204.93	0.00	0.00	0.00
15,100.00	90.00	359.89	10,000.00	5,304.92	-10.12	5,304.93	0.00	0.00	0.00
15,200.00	90.00	359.89	10,000.00	5,404.92	-10.31	5,404.93	0.00	0.00	0.00
15,300.00	90.00	359.89	10,000.00	5,504.92	-10.50	5,504.93	0.00	0.00	0.00
15,400.00	90.00	359.89	10,000.00	5,604.92	-10.69	5,604.93	0.00	0.00	0.00
15,500.00	90.00	359.89	10,000.00	5,704.92	-10.88	5,704.93	0.00	0.00	0.00
15,600.00	90.00	359.89	10,000.00	5,804.92	-11.07	5,804.93	0.00	0.00	0.00
15,700.00	90.00	359.89	10,000.00	5,904.92	-11.26	5,904.93	0.00	0.00	0.00
15,800.00	90.00	359.89	10,000.00	6,004.92	-11.46	6,004.93	0.00	0.00	0.00
15,900.00	90.00	359.89	10,000.00	6,104.92	-11.65	6,104.93	0.00	0.00	0.00
16,000.00	90.00	359.89	10,000.00	6,204.92	-11.84	6,204.93	0.00	0.00	0.00
16,100.00	90.00	359.89	10,000.00	6,304.92	-12.03	6,304.93	0.00	0.00	0.00
16,200.00	90.00	359.89	10,000.00	6,404.92	-12.22	6,404.93	0.00	0.00	0.00
16,300.00	90.00	359.89	10,000.00	6,504.92	-12.41	6,504.93	0.00	0.00	0.00
16,400.00	90.00	359.89	10,000.00	6,604.92	-12.60	6,604.93	0.00	0.00	0.00
16,500.00	90.00	359.89	10,000.00	6,704.92	-12.79	6,704.93	0.00	0.00	0.00
16,600.00	90.00	359.89	10,000.00	6,804.92	-12.98	6,804.93	0.00	0.00	0.00
16,700.00	90.00	359.89	10,000.00	6,904.92	-13.17	6,904.93	0.00	0.00	0.00
16,766.88	90.00	359.89	10,000.00	6,971.80	-13.30	6,971.81	0.00	0.00	0.00
TD at 16766.88									

Design Targets

Target Name

- hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- Shape									
BHL - Littlefield 33 Fe	0.00	0.00	10,000.00	6,971.80	-13.30	371,261.60	648,362.60	32° 1' 12.74900 N	03° 59' 16.81060 W
- plan hits target center									
- Point									

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
9,522.54	9,522.54	0.00	0.00	KOP, Begin 12.00°/100' Build
10,272.54	10,000.00	477.46	-0.91	LP, Hold 90.00° Inc at 359.89° Azm
16,766.88	10,000.00	6,971.80	-13.30	TD at 16766.88