

US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

WELD_RIVERBEND 4-13 PAD

Riverbend 3-13

Riverbend 3-13

Plan: Riverbend 3-13 (wp01)

Standard Planning Report

11 July, 2011



Weatherford®

Project: COLORADO NORTHERN ZONE - 83
 Site: WELD_RIVERBEND 4-13 PAD
 Well: Riverbend 3-13
 Wellbore: Riverbend 3-13
 Section:
 SHL:
 Design: Riverbend 3-13 (wp01)
 Latitude: 40.055934
 Longitude: -104.847381
 GL: 4952.00
 KB: 15' + 4952' GL @ 4967.00ft

FORMATION TOP DETAILS		
TVDPATH	MDPATH	FORMATION
4052.00	4259.61	PK Depth
4623.00	4865.45	SX Depth
7155.00	7422.26	NIO Depth
7502.00	7769.26	CD Depth
7587.00	7854.26	GH Depth
7937.00	8204.26	J Depth



Azimuths to True North
 Magnetic North: 8.87°

Magnetic Field
 Strength: 52932.6snT
 Dip Angle: 66.76°
 Date: 7/11/2011
 Model: IGRF2010

WELL DETAILS: Riverbend 3-13

+N/-S	+E/-W	Northing	Ground Level: Easting	4952.00 Latitude	Longitude	Slot
0.00	0.00	1263894.42	3182681.95	40.055934	-104.847381	

CASING DETAILS

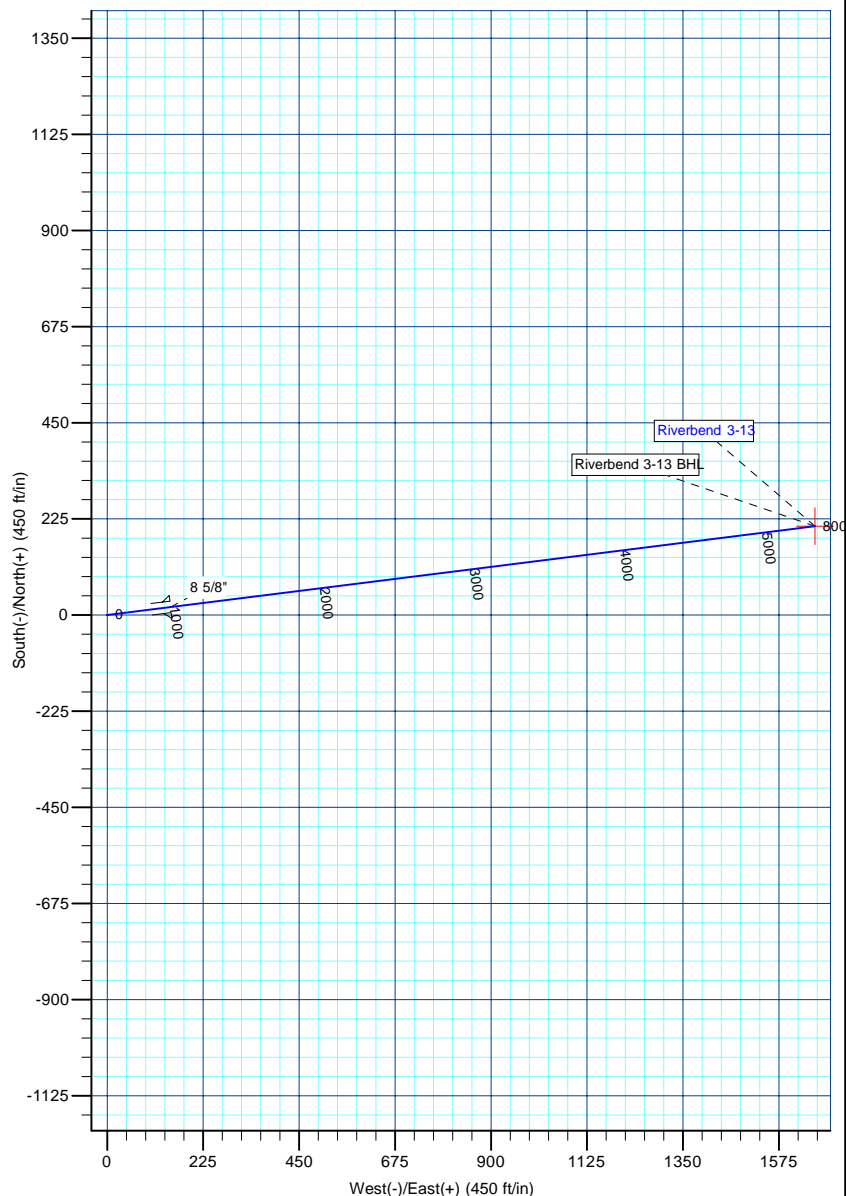
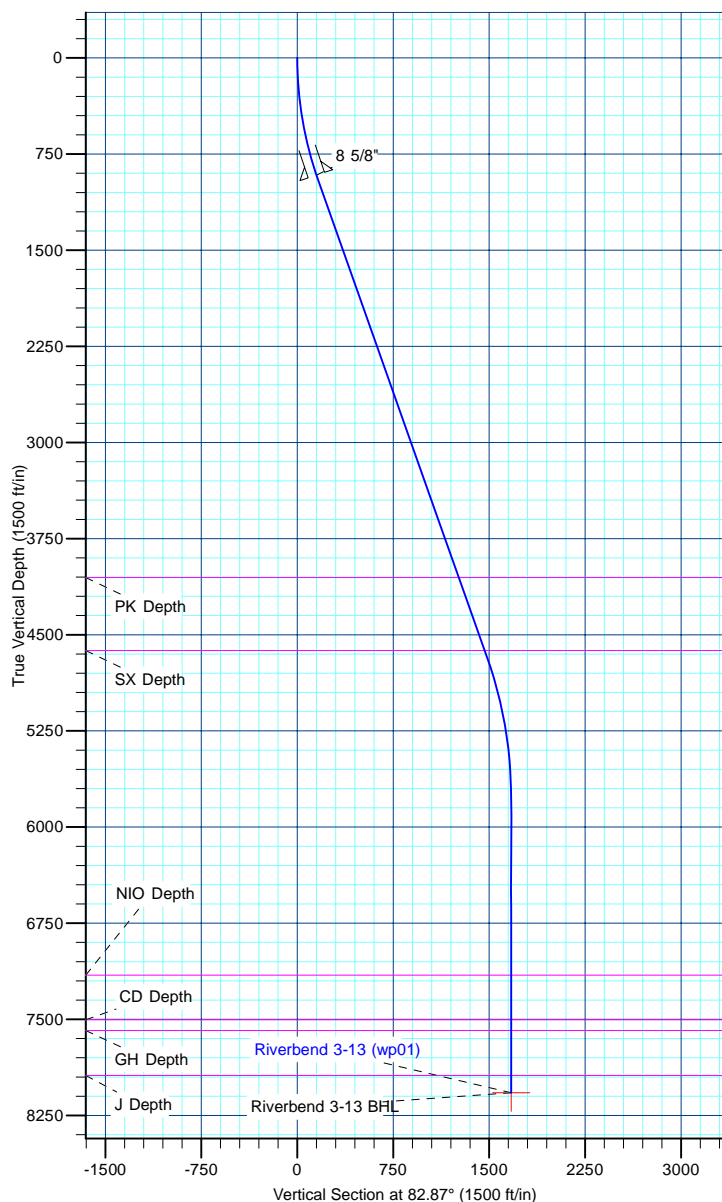
TVD	MD	Name	Size
915.00	931.32	8 5/8"	8-5/8

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape Point
Riverbend 3-13 BHL	8072.00	207.71	1659.37	1264114.33	3184339.75	40.056504	-104.841453	

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	V Sect
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
976.29	19.53	82.87	957.51	20.46	163.48	2.00	82.87	164.75
4923.50	19.53	82.87	4677.71	184.32	1472.54	0.00	0.00	1484.04
6039.26	0.00	0.00	5772.00	207.71	1659.37	1.75	180.00	1672.32
8339.26	0.00	0.00	8072.00	207.71	1659.37	0.00	0.00	1672.32



Database:	edm5000p	Local Co-ordinate Reference:	Well Riverbend 3-13
Company:	US ROCKIES REGION PLANNING	TVD Reference:	15' + 4952' GL @ 4967.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	15' + 4952' GL @ 4967.00ft
Site:	WELD_RIVERBEND 4-13 PAD	North Reference:	True
Well:	Riverbend 3-13	Survey Calculation Method:	Minimum Curvature
Wellbore:	Riverbend 3-13		
Design:	Riverbend 3-13 (wp01)		

Project	COLORADO NORTHERN ZONE - 83		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site		WELD_RIVERBEND 4-13 PAD			
Site Position:		Northing:	1,263,964.36 ft	Latitude:	40.056126
From:	Lat/Long	Easting:	3,182,681.16 ft	Longitude:	-104.847382
Position Uncertainty:	0.00 ft	Slot Radius:	0 "	Grid Convergence:	0.42

Well	Riverbend 3-13					
Well Position	+N-S	-69.95 ft	Northing:	1,263,894.41 ft	Latitude:	40.055934
	+E-W	0.28 ft	Easting:	3,182,681.95 ft	Longitude:	-104.847381
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	4,952.00 ft

Wellbore	Riverbend 3-13				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	7/11/2011	8.87	66.76	52,933

Design	Riverbend 3-13 (wp01)				
Audit Notes:					
Version:	Phase:	PLAN	Tie On Depth:	0.00	
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.00	0.00	0.00	82.87	

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
976.29	19.53	82.87	957.51	20.46	163.48	2.00	2.00	0.00	82.87	
4,923.50	19.53	82.87	4,677.71	184.32	1,472.54	0.00	0.00	0.00	0.00	
6,039.26	0.00	0.00	5,772.00	207.71	1,659.37	1.75	-1.75	0.00	180.00	
8,339.26	0.00	0.00	8,072.00	207.71	1,659.37	0.00	0.00	0.00	0.00	Riverbend 3-13 BHI

Database:	edm5000p	Local Co-ordinate Reference:	Well Riverbend 3-13
Company:	US ROCKIES REGION PLANNING	TVD Reference:	15' + 4952' GL @ 4967.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	15' + 4952' GL @ 4967.00ft
Site:	WELD_RIVERBEND 4-13 PAD	North Reference:	True
Well:	Riverbend 3-13	Survey Calculation Method:	Minimum Curvature
Wellbore:	Riverbend 3-13		
Design:	Riverbend 3-13 (wp01)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	2.00	82.87	99.98	0.22	1.73	1.75	2.00	2.00	0.00
200.00	4.00	82.87	199.84	0.87	6.92	6.98	2.00	2.00	0.00
300.00	6.00	82.87	299.45	1.95	15.57	15.69	2.00	2.00	0.00
400.00	8.00	82.87	398.70	3.46	27.66	27.88	2.00	2.00	0.00
500.00	10.00	82.87	497.47	5.41	43.19	43.52	2.00	2.00	0.00
600.00	12.00	82.87	595.62	7.78	62.12	62.60	2.00	2.00	0.00
700.00	14.00	82.87	693.06	10.57	84.44	85.10	2.00	2.00	0.00
800.00	16.00	82.87	789.64	13.78	110.12	110.98	2.00	2.00	0.00
900.00	18.00	82.87	885.27	17.41	139.13	140.21	2.00	2.00	0.00
931.32	18.63	82.87	915.00	18.64	148.89	150.05	2.00	2.00	0.00
8 5/8"									
976.29	19.53	82.87	957.51	20.46	163.48	164.75	2.00	2.00	0.00
Start 3947.20 hold at 976.29 MD									
1,000.00	19.53	82.87	979.85	21.45	171.34	172.68	0.00	0.00	0.00
1,100.00	19.53	82.87	1,074.10	25.60	204.50	206.10	0.00	0.00	0.00
1,200.00	19.53	82.87	1,168.35	29.75	237.67	239.52	0.00	0.00	0.00
1,300.00	19.53	82.87	1,262.60	33.90	270.83	272.95	0.00	0.00	0.00
1,400.00	19.53	82.87	1,356.84	38.05	304.00	306.37	0.00	0.00	0.00
1,500.00	19.53	82.87	1,451.09	42.20	337.16	339.79	0.00	0.00	0.00
1,600.00	19.53	82.87	1,545.34	46.35	370.33	373.21	0.00	0.00	0.00
1,700.00	19.53	82.87	1,639.59	50.51	403.49	406.64	0.00	0.00	0.00
1,800.00	19.53	82.87	1,733.84	54.66	436.65	440.06	0.00	0.00	0.00
1,900.00	19.53	82.87	1,828.09	58.81	469.82	473.48	0.00	0.00	0.00
2,000.00	19.53	82.87	1,922.34	62.96	502.98	506.91	0.00	0.00	0.00
2,100.00	19.53	82.87	2,016.59	67.11	536.15	540.33	0.00	0.00	0.00
2,200.00	19.53	82.87	2,110.84	71.26	569.31	573.75	0.00	0.00	0.00
2,300.00	19.53	82.87	2,205.09	75.41	602.48	607.18	0.00	0.00	0.00
2,400.00	19.53	82.87	2,299.34	79.56	635.64	640.60	0.00	0.00	0.00
2,500.00	19.53	82.87	2,393.58	83.71	668.81	674.02	0.00	0.00	0.00
2,600.00	19.53	82.87	2,487.83	87.87	701.97	707.45	0.00	0.00	0.00
2,700.00	19.53	82.87	2,582.08	92.02	735.13	740.87	0.00	0.00	0.00
2,800.00	19.53	82.87	2,676.33	96.17	768.30	774.29	0.00	0.00	0.00
2,900.00	19.53	82.87	2,770.58	100.32	801.46	807.72	0.00	0.00	0.00
3,000.00	19.53	82.87	2,864.83	104.47	834.63	841.14	0.00	0.00	0.00
3,100.00	19.53	82.87	2,959.08	108.62	867.79	874.56	0.00	0.00	0.00
3,200.00	19.53	82.87	3,053.33	112.77	900.96	907.99	0.00	0.00	0.00
3,300.00	19.53	82.87	3,147.58	116.92	934.12	941.41	0.00	0.00	0.00
3,400.00	19.53	82.87	3,241.83	121.08	967.29	974.83	0.00	0.00	0.00
3,500.00	19.53	82.87	3,336.08	125.23	1,000.45	1,008.26	0.00	0.00	0.00
3,600.00	19.53	82.87	3,430.32	129.38	1,033.61	1,041.68	0.00	0.00	0.00
3,700.00	19.53	82.87	3,524.57	133.53	1,066.78	1,075.10	0.00	0.00	0.00
3,800.00	19.53	82.87	3,618.82	137.68	1,099.94	1,108.53	0.00	0.00	0.00
3,900.00	19.53	82.87	3,713.07	141.83	1,133.11	1,141.95	0.00	0.00	0.00
4,000.00	19.53	82.87	3,807.32	145.98	1,166.27	1,175.37	0.00	0.00	0.00
4,100.00	19.53	82.87	3,901.57	150.13	1,199.44	1,208.80	0.00	0.00	0.00
4,200.00	19.53	82.87	3,995.82	154.29	1,232.60	1,242.22	0.00	0.00	0.00
4,259.61	19.53	82.87	4,052.00	156.76	1,252.37	1,262.14	0.00	0.00	0.00
PK Depth									
4,300.00	19.53	82.87	4,090.07	158.44	1,265.77	1,275.64	0.00	0.00	0.00
4,400.00	19.53	82.87	4,184.32	162.59	1,298.93	1,309.07	0.00	0.00	0.00
4,500.00	19.53	82.87	4,278.57	166.74	1,332.09	1,342.49	0.00	0.00	0.00
4,600.00	19.53	82.87	4,372.82	170.89	1,365.26	1,375.91	0.00	0.00	0.00

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Site:	WELD_RIVERBEND 4-13 PAD	North Reference:	True
Well:	Riverbend 3-13	Survey Calculation Method:	Minimum Curvature
Wellbore:	Riverbend 3-13		
Design:	Riverbend 3-13 (wp01)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,700.00	19.53	82.87	4,467.06	175.04	1,398.42	1,409.34	0.00	0.00	0.00
4,800.00	19.53	82.87	4,561.31	179.19	1,431.59	1,442.76	0.00	0.00	0.00
4,865.45	19.53	82.87	4,623.00	181.91	1,453.29	1,464.63	0.00	0.00	0.00
SX Depth									
4,900.00	19.53	82.87	4,655.56	183.34	1,464.75	1,476.18	0.00	0.00	0.00
4,923.50	19.53	82.87	4,677.71	184.32	1,472.54	1,484.04	0.00	0.00	0.00
Start Drop -1.75									
5,000.00	18.19	82.87	4,750.10	187.39	1,497.08	1,508.76	1.75	-1.75	0.00
5,100.00	16.44	82.87	4,845.57	191.09	1,526.60	1,538.52	1.75	-1.75	0.00
5,200.00	14.69	82.87	4,941.90	194.42	1,553.22	1,565.34	1.75	-1.75	0.00
5,300.00	12.94	82.87	5,039.00	197.38	1,576.91	1,589.22	1.75	-1.75	0.00
5,400.00	11.19	82.87	5,136.79	199.98	1,597.65	1,610.11	1.75	-1.75	0.00
5,500.00	9.44	82.87	5,235.17	202.20	1,615.41	1,628.01	1.75	-1.75	0.00
5,600.00	7.69	82.87	5,334.06	204.05	1,630.18	1,642.90	1.75	-1.75	0.00
5,700.00	5.94	82.87	5,433.35	205.52	1,641.95	1,654.76	1.75	-1.75	0.00
5,800.00	4.19	82.87	5,532.95	206.62	1,650.70	1,663.58	1.75	-1.75	0.00
5,900.00	2.44	82.87	5,632.78	207.34	1,656.44	1,669.36	1.75	-1.75	0.00
6,000.00	0.69	82.87	5,732.74	207.68	1,659.14	1,672.09	1.75	-1.75	0.00
6,039.26	0.00	0.00	5,772.00	207.71	1,659.37	1,672.32	1.75	-1.75	0.00
Start 2300.00 hold at 6039.26 MD									
6,100.00	0.00	0.00	5,832.74	207.71	1,659.37	1,672.32	0.00	0.00	0.00
6,200.00	0.00	0.00	5,932.74	207.71	1,659.37	1,672.32	0.00	0.00	0.00
6,300.00	0.00	0.00	6,032.74	207.71	1,659.37	1,672.32	0.00	0.00	0.00
6,400.00	0.00	0.00	6,132.74	207.71	1,659.37	1,672.32	0.00	0.00	0.00
6,500.00	0.00	0.00	6,232.74	207.71	1,659.37	1,672.32	0.00	0.00	0.00
6,600.00	0.00	0.00	6,332.74	207.71	1,659.37	1,672.32	0.00	0.00	0.00
6,700.00	0.00	0.00	6,432.74	207.71	1,659.37	1,672.32	0.00	0.00	0.00
6,800.00	0.00	0.00	6,532.74	207.71	1,659.37	1,672.32	0.00	0.00	0.00
6,900.00	0.00	0.00	6,632.74	207.71	1,659.37	1,672.32	0.00	0.00	0.00
7,000.00	0.00	0.00	6,732.74	207.71	1,659.37	1,672.32	0.00	0.00	0.00
7,100.00	0.00	0.00	6,832.74	207.71	1,659.37	1,672.32	0.00	0.00	0.00
7,200.00	0.00	0.00	6,932.74	207.71	1,659.37	1,672.32	0.00	0.00	0.00
7,300.00	0.00	0.00	7,032.74	207.71	1,659.37	1,672.32	0.00	0.00	0.00
7,400.00	0.00	0.00	7,132.74	207.71	1,659.37	1,672.32	0.00	0.00	0.00
7,422.26	0.00	0.00	7,155.00	207.71	1,659.37	1,672.32	0.00	0.00	0.00
NIO Depth									
7,500.00	0.00	0.00	7,232.74	207.71	1,659.37	1,672.32	0.00	0.00	0.00
7,600.00	0.00	0.00	7,332.74	207.71	1,659.37	1,672.32	0.00	0.00	0.00
7,700.00	0.00	0.00	7,432.74	207.71	1,659.37	1,672.32	0.00	0.00	0.00
7,769.26	0.00	0.00	7,502.00	207.71	1,659.37	1,672.32	0.00	0.00	0.00
CD Depth									
7,800.00	0.00	0.00	7,532.74	207.71	1,659.37	1,672.32	0.00	0.00	0.00
7,854.26	0.00	0.00	7,587.00	207.71	1,659.37	1,672.32	0.00	0.00	0.00
GH Depth									
7,900.00	0.00	0.00	7,632.74	207.71	1,659.37	1,672.32	0.00	0.00	0.00
8,000.00	0.00	0.00	7,732.74	207.71	1,659.37	1,672.32	0.00	0.00	0.00
8,100.00	0.00	0.00	7,832.74	207.71	1,659.37	1,672.32	0.00	0.00	0.00
8,200.00	0.00	0.00	7,932.74	207.71	1,659.37	1,672.32	0.00	0.00	0.00
8,204.26	0.00	0.00	7,937.00	207.71	1,659.37	1,672.32	0.00	0.00	0.00
J Depth									
8,300.00	0.00	0.00	8,032.74	207.71	1,659.37	1,672.32	0.00	0.00	0.00
8,339.26	0.00	0.00	8,072.00	207.71	1,659.37	1,672.32	0.00	0.00	0.00
TD at 8339.26 - Riverbend 3-13 BHL									

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Company:	US ROCKIES REGION PLANNING	TVD Reference:	15' + 4952' GL @ 4967.00ft
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Site:	WELD_RIVERBEND 4-13 PAD	North Reference:	True
Well:	Riverbend 3-13	Survey Calculation Method:	Minimum Curvature
Wellbore:	Riverbend 3-13		
Design:	Riverbend 3-13 (wp01)		

Design Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
- Shape									
Riverbend 3-13 BHL	0.00	0.00	8,072.00	207.71	1,659.37	1,264,114.33	3,184,339.75	40.056504	-104.841453
- plan hits target center									
- Point									

Casing Points					
Measured Depth	Vertical Depth	Name		Casing Diameter	Hole Diameter
(ft)	(ft)			(")	(")
931.32	915.00	8 5/8"		8-5/8	11

Formations						
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction	
(ft)	(ft)			(°)	(°)	
4,259.61	4,052.00	PK Depth				
4,865.45	4,623.00	SX Depth				
7,422.26	7,155.00	NIO Depth				
7,769.26	7,502.00	CD Depth				
7,854.26	7,587.00	GH Depth				
8,204.26	7,937.00	J Depth				

Plan Annotations					
Measured Depth	Vertical Depth	Local Coordinates		Comment	
(ft)	(ft)	+N/-S	+E/-W		
(ft)	(ft)	(ft)	(ft)		
976.29	957.51	20.46	163.48	Start 3947.20 hold at 976.29 MD	
4,923.50	4,677.71	184.32	1,472.54	Start Drop -1.75	
6,039.26	5,772.00	207.71	1,659.37	Start 2300.00 hold at 6039.26 MD	
8,339.26	8,072.00	207.71	1,659.37	TD at 8339.26	