

Project: Mesa
 Site: NW Sec 36-T6S-R97W
 Well: Puckett 11C-36D
 Wellbore: DD
 Design: Plan #1



Petroleum Development Corporation

WELL DETAILS: Puckett 11C-36D

+N/-S 0.0 +E/-W 0.0 Northing 1612650.58

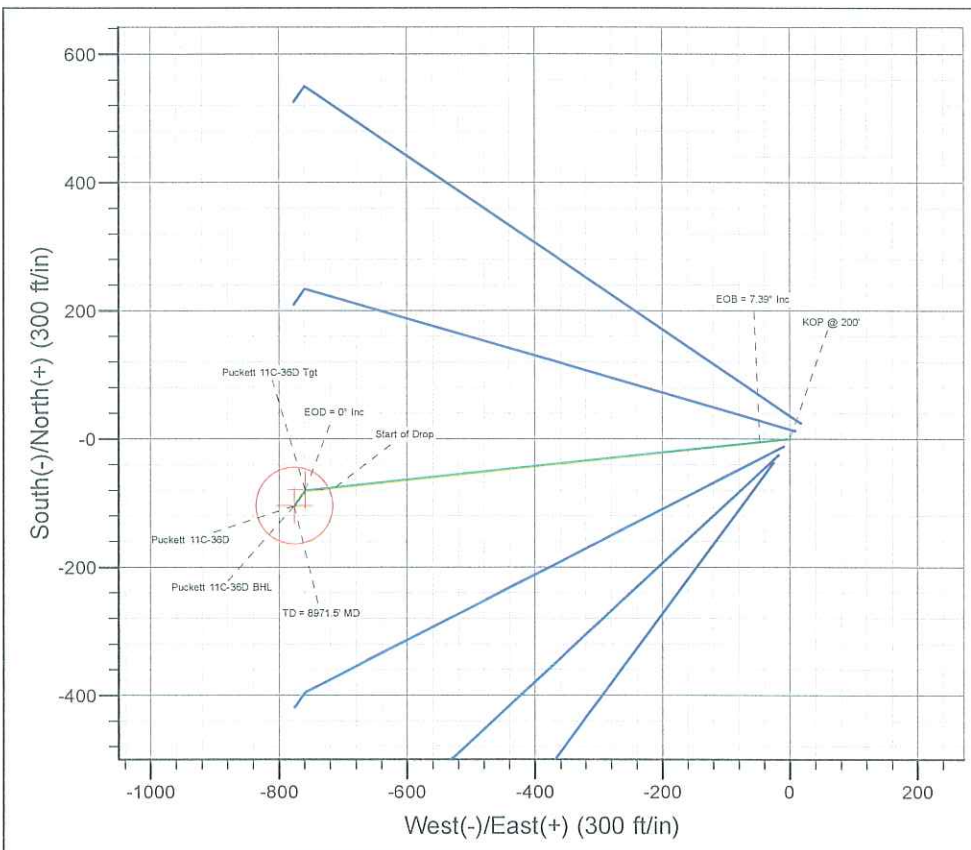
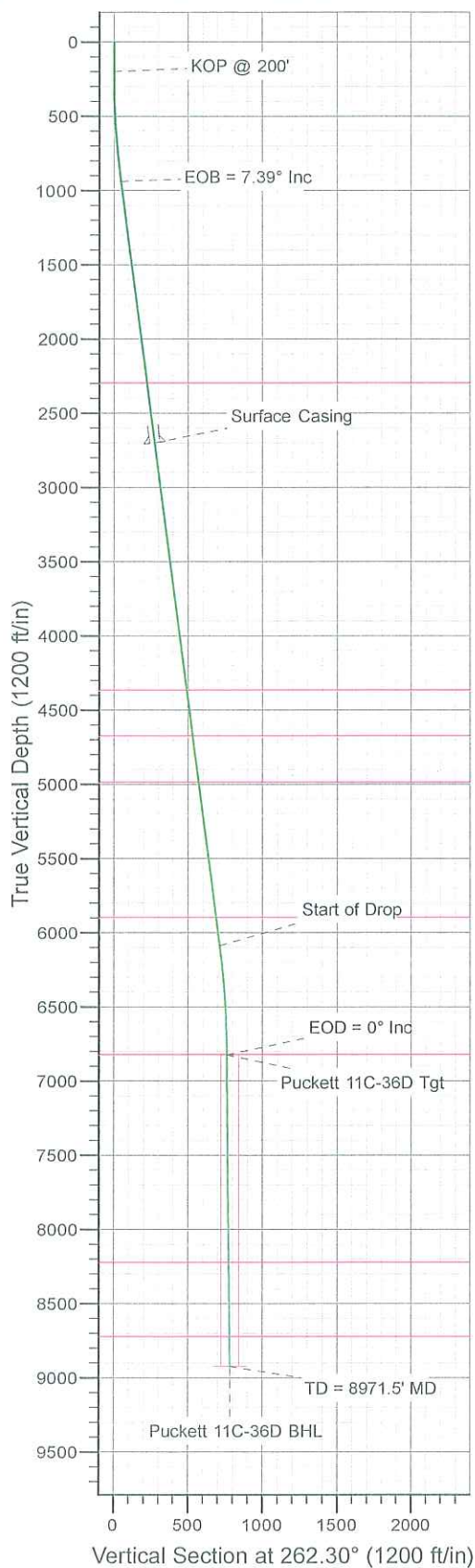
Ground Level: 8375.0
 Easting 2245183.23 Latitude 39.484994

Longitude -108.174722 Slot



Azimuths to True North
 Magnetic North: 10.56°

Magnetic Field
 Strength: 52307.2snT
 Dip Angle: 65.72°
 Date: 2010/05/27
 Model: IGRF2010-14



ANNOTATIONS

TVD	MD	Annotation
200.0	200.0	KOP @ 200'
937.0	939.1	EOB = 7.39° Inc
6087.0	6132.1	Start of Drop
6824.0	6871.2	EOD = 0° Inc
8924.0	8971.5	TD = 8971.5' MD

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
2299.0	2312.5	Wasatch
4369.0	4399.8	Wasatch "G" Sand
4679.0	4712.4	Fort Union
4989.0	5025.0	Base Fort Union
5899.0	5942.6	Mesaverde/Williams Fk
6824.0	6871.2	Top Gas Cell
8224.0	8271.4	Cameo
8724.0	8771.4	Rollins

ON DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.0	
3	939.1	7.39	263.96	937.0	-5.0	-47.3	1.00	263.96	47.6	
4	6132.1	7.39	263.96	6087.0	-75.3	-711.7	0.00	0.00	715.3	
5	6871.2	0.00	0.00	6824.0	-80.3	-759.0	1.00	180.00	762.9	Puckett 11C-36D Tgt
6	7229.0	0.89	214.95	7181.7	-82.6	-760.6	0.25	214.95	764.8	
7	8971.5	0.89	214.95	8924.0	-104.9	-776.2	0.00	0.00	783.2	Puckett 11C-36D BHL

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
Puckett 11C-36D Tgt	6824.0	-80.3	-759.0	39.484773	-108.177411	Point
Puckett 11C-36D BHL	8924.0	-104.9	-776.2	39.484706	-108.177472	Circle (Radius: 60.0)

CASING DETAILS

TVD	MD	Name	Size
2700.0	2716.8	Surface Casing	

Plan: Plan #1 (Puckett 11C-36D/DD)

Created By: Jon Schweigert Date: 15:55, May 27 2010
 Checked: Date: _____
 Reviewed: Date: _____
 Approved: Date: _____



Database:	RMR1 Database	Local Co-ordinate Reference:	Well Puckett 11C-36D
Company:	Petroleum Development Corp.	TVD Reference:	Puckett 11C-36D KBE @ 8399.0ft (H&P 318)
Project:	Mesa	MD Reference:	Puckett 11C-36D KBE @ 8399.0ft (H&P 318)
Site:	NW Sec 36-T6S-R97W	North Reference:	True
Well:	Puckett 11C-36D	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #1		

Project	Mesa		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Central Zone		

Site		NW Sec 36-T6S-R97W			
Site Position:		Northing:	1,612,674.48 ft	Latitude:	39.485061
From:	Lat/Long	Easting:	2,245,201.15 ft	Longitude:	-108.174661
Position Uncertainty:	0.0 ft	Slot Radius:		Grid Convergence:	-1.69 °

Well	Puckett 11C-36D					
Well Position	+N/-S	-24.4 ft	Northing:	1,612,650.58 ft	Latitude:	39.484994
	+E/-W	-17.2 ft	Easting:	2,245,183.23 ft	Longitude:	-108.174722
Position Uncertainty		0.0 ft	Wellhead Elevation:		Ground Level:	8,375.0 ft

Wellbore	DD				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010-14	2010/05/27	10.56	65.72	52,307

Design	Plan #1			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(ft)	(ft)	(ft)	(°)
	0.0	0.0	0.0	262.30

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
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.00	0.00	
939.1	7.39	263.96	937.0	-5.0	-47.3	1.00	1.00	0.00	263.96	
6,132.1	7.39	263.96	6,087.0	-75.3	-711.7	0.00	0.00	0.00	0.00	
6,871.2	0.00	0.00	6,824.0	-80.3	-759.0	1.00	-1.00	0.00	180.00	Puckett 11C-36D Tgt
7,229.0	0.89	214.95	7,181.7	-82.6	-760.6	0.25	0.25	-40.55	214.95	
8,971.5	0.89	214.95	8,924.0	-104.9	-776.2	0.00	0.00	0.00	0.00	Puckett 11C-36D BHL

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Company:	Petroleum Development Corp.	TVD Reference:	Puckett 11C-36D KBE @ 8399.0ft (H&P 318)
Project:	Mesa	MD Reference:	Puckett 11C-36D KBE @ 8399.0ft (H&P 318)
Site:	NW Sec 36-T6S-R97W	North Reference:	True
Well:	Puckett 11C-36D	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #1		

Planned Survey											
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	Subsea Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
0.0	0.00	0.00	0.0	-8,399.0	0.0	0.0	0.0	0.00	0.00	0.00	
100.0	0.00	0.00	100.0	-8,299.0	0.0	0.0	0.0	0.00	0.00	0.00	
KOP @ 200'											
200.0	0.00	0.00	200.0	-8,199.0	0.0	0.0	0.0	0.00	0.00	0.00	
300.0	1.00	263.96	300.0	-8,099.0	-0.1	-0.9	0.9	1.00	1.00	0.00	
400.0	2.00	263.96	400.0	-7,999.0	-0.4	-3.5	3.5	1.00	1.00	0.00	
500.0	3.00	263.96	499.9	-7,899.1	-0.8	-7.8	7.8	1.00	1.00	0.00	
600.0	4.00	263.96	599.7	-7,799.3	-1.5	-13.9	14.0	1.00	1.00	0.00	
700.0	5.00	263.96	699.4	-7,699.6	-2.3	-21.7	21.8	1.00	1.00	0.00	
800.0	6.00	263.96	798.9	-7,600.1	-3.3	-31.2	31.4	1.00	1.00	0.00	
900.0	7.00	263.96	898.3	-7,500.7	-4.5	-42.5	42.7	1.00	1.00	0.00	
EOB = 7.39° Inc											
939.1	7.39	263.96	937.0	-7,462.0	-5.0	-47.3	47.6	1.00	1.00	0.00	
1,000.0	7.39	263.96	997.4	-7,401.6	-5.8	-55.1	55.4	0.00	0.00	0.00	
1,100.0	7.39	263.96	1,096.6	-7,302.4	-7.2	-67.9	68.3	0.00	0.00	0.00	
1,200.0	7.39	263.96	1,195.8	-7,203.2	-8.5	-80.7	81.1	0.00	0.00	0.00	
1,300.0	7.39	263.96	1,295.0	-7,104.0	-9.9	-93.5	94.0	0.00	0.00	0.00	
1,400.0	7.39	263.96	1,394.1	-7,004.9	-11.2	-106.3	106.8	0.00	0.00	0.00	
1,500.0	7.39	263.96	1,493.3	-6,905.7	-12.6	-119.1	119.7	0.00	0.00	0.00	
1,600.0	7.39	263.96	1,592.5	-6,806.5	-14.0	-131.9	132.6	0.00	0.00	0.00	
1,700.0	7.39	263.96	1,691.6	-6,707.4	-15.3	-144.7	145.4	0.00	0.00	0.00	
1,800.0	7.39	263.96	1,790.8	-6,608.2	-16.7	-157.5	158.3	0.00	0.00	0.00	
1,900.0	7.39	263.96	1,890.0	-6,509.0	-18.0	-170.3	171.1	0.00	0.00	0.00	
2,000.0	7.39	263.96	1,989.1	-6,409.9	-19.4	-183.1	184.0	0.00	0.00	0.00	
2,100.0	7.39	263.96	2,088.3	-6,310.7	-20.7	-195.8	196.9	0.00	0.00	0.00	
2,200.0	7.39	263.96	2,187.5	-6,211.5	-22.1	-208.6	209.7	0.00	0.00	0.00	
2,300.0	7.39	263.96	2,286.6	-6,112.4	-23.4	-221.4	222.6	0.00	0.00	0.00	
Wasatch											
2,312.5	7.39	263.96	2,299.0	-6,100.0	-23.6	-223.0	224.2	0.00	0.00	0.00	
2,400.0	7.39	263.96	2,385.8	-6,013.2	-24.8	-234.2	235.4	0.00	0.00	0.00	
2,500.0	7.39	263.96	2,485.0	-5,914.0	-26.1	-247.0	248.3	0.00	0.00	0.00	
2,600.0	7.39	263.96	2,584.2	-5,814.8	-27.5	-259.8	261.2	0.00	0.00	0.00	
2,700.0	7.39	263.96	2,683.3	-5,715.7	-28.8	-272.6	274.0	0.00	0.00	0.00	
Surface Casing											
2,716.8	7.39	263.96	2,700.0	-5,699.0	-29.1	-274.8	276.2	0.00	0.00	0.00	
2,800.0	7.39	263.96	2,782.5	-5,616.5	-30.2	-285.4	286.9	0.00	0.00	0.00	
2,900.0	7.39	263.96	2,881.7	-5,517.3	-31.5	-298.2	299.7	0.00	0.00	0.00	
3,000.0	7.39	263.96	2,980.8	-5,418.2	-32.9	-311.0	312.6	0.00	0.00	0.00	
3,100.0	7.39	263.96	3,080.0	-5,319.0	-34.3	-323.8	325.4	0.00	0.00	0.00	
3,200.0	7.39	263.96	3,179.2	-5,219.8	-35.6	-336.6	338.3	0.00	0.00	0.00	
3,300.0	7.39	263.96	3,278.3	-5,120.7	-37.0	-349.4	351.2	0.00	0.00	0.00	
3,400.0	7.39	263.96	3,377.5	-5,021.5	-38.3	-362.2	364.0	0.00	0.00	0.00	
3,500.0	7.39	263.96	3,476.7	-4,922.3	-39.7	-374.9	376.9	0.00	0.00	0.00	
3,600.0	7.39	263.96	3,575.8	-4,823.2	-41.0	-387.7	389.7	0.00	0.00	0.00	
3,700.0	7.39	263.96	3,675.0	-4,724.0	-42.4	-400.5	402.6	0.00	0.00	0.00	
3,800.0	7.39	263.96	3,774.2	-4,624.8	-43.7	-413.3	415.5	0.00	0.00	0.00	
3,900.0	7.39	263.96	3,873.4	-4,525.6	-45.1	-426.1	428.3	0.00	0.00	0.00	
4,000.0	7.39	263.96	3,972.5	-4,426.5	-46.4	-438.9	441.2	0.00	0.00	0.00	
4,100.0	7.39	263.96	4,071.7	-4,327.3	-47.8	-451.7	454.0	0.00	0.00	0.00	
4,200.0	7.39	263.96	4,170.9	-4,228.1	-49.1	-464.5	466.9	0.00	0.00	0.00	
4,300.0	7.39	263.96	4,270.0	-4,129.0	-50.5	-477.3	479.7	0.00	0.00	0.00	
Wasatch "G" Sand											
4,399.8	7.39	263.96	4,369.0	-4,030.0	-51.8	-490.1	492.6	0.00	0.00	0.00	
4,400.0	7.39	263.96	4,369.2	-4,029.8	-51.8	-490.1	492.6	0.00	0.00	0.00	

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Project:	Mesa	MD Reference:	Puckett 11C-36D KBE @ 8399.0ft (H&P 318)
Site:	NW Sec 36-T6S-R97W	North Reference:	True
Well:	Puckett 11C-36D	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	Subsea Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,500.0	7.39	263.96	4,468.4	-3,930.6	-53.2	-502.9	505.5	0.00	0.00	0.00
4,600.0	7.39	263.96	4,567.5	-3,831.5	-54.6	-515.7	518.3	0.00	0.00	0.00
4,700.0	7.39	263.96	4,666.7	-3,732.3	-55.9	-528.5	531.2	0.00	0.00	0.00
Fort Union										
4,712.4	7.39	263.96	4,679.0	-3,720.0	-56.1	-530.0	532.8	0.00	0.00	0.00
4,800.0	7.39	263.96	4,765.9	-3,633.1	-57.3	-541.2	544.0	0.00	0.00	0.00
4,900.0	7.39	263.96	4,865.0	-3,534.0	-58.6	-554.0	556.9	0.00	0.00	0.00
5,000.0	7.39	263.96	4,964.2	-3,434.8	-60.0	-566.8	569.8	0.00	0.00	0.00
Base Fort Union										
5,025.0	7.39	263.96	4,989.0	-3,410.0	-60.3	-570.0	573.0	0.00	0.00	0.00
5,100.0	7.39	263.96	5,063.4	-3,335.6	-61.3	-579.6	582.6	0.00	0.00	0.00
5,200.0	7.39	263.96	5,162.6	-3,236.4	-62.7	-592.4	595.5	0.00	0.00	0.00
5,300.0	7.39	263.96	5,261.7	-3,137.3	-64.0	-605.2	608.3	0.00	0.00	0.00
5,400.0	7.39	263.96	5,360.9	-3,038.1	-65.4	-618.0	621.2	0.00	0.00	0.00
5,500.0	7.39	263.96	5,460.1	-2,938.9	-66.7	-630.8	634.0	0.00	0.00	0.00
5,600.0	7.39	263.96	5,559.2	-2,839.8	-68.1	-643.6	646.9	0.00	0.00	0.00
5,700.0	7.39	263.96	5,658.4	-2,740.6	-69.4	-656.4	659.8	0.00	0.00	0.00
5,800.0	7.39	263.96	5,757.6	-2,641.4	-70.8	-669.2	672.6	0.00	0.00	0.00
5,900.0	7.39	263.96	5,856.7	-2,542.3	-72.1	-682.0	685.5	0.00	0.00	0.00
Mesaverde/Williams Fk *										
5,942.6	7.39	263.96	5,899.0	-2,500.0	-72.7	-687.4	691.0	0.00	0.00	0.00
6,000.0	7.39	263.96	5,955.9	-2,443.1	-73.5	-694.8	698.3	0.00	0.00	0.00
6,100.0	7.39	263.96	6,055.1	-2,343.9	-74.9	-707.5	711.2	0.00	0.00	0.00
Start of Drop										
6,132.1	7.39	263.96	6,087.0	-2,312.0	-75.3	-711.7	715.3	0.00	0.00	0.00
6,200.0	6.71	263.96	6,154.3	-2,244.7	-76.2	-719.9	723.7	1.00	-1.00	0.00
6,300.0	5.71	263.96	6,253.7	-2,145.3	-77.3	-730.7	734.5	1.00	-1.00	0.00
6,400.0	4.71	263.96	6,353.3	-2,045.7	-78.3	-739.7	743.6	1.00	-1.00	0.00
6,500.0	3.71	263.96	6,453.0	-1,946.0	-79.0	-747.0	750.9	1.00	-1.00	0.00
6,600.0	2.71	263.96	6,552.9	-1,846.1	-79.6	-752.6	756.5	1.00	-1.00	0.00
6,700.0	1.71	263.96	6,652.8	-1,746.2	-80.0	-756.5	760.4	1.00	-1.00	0.00
6,800.0	0.71	263.96	6,752.8	-1,646.2	-80.3	-758.6	762.5	1.00	-1.00	0.00
EOD = 0° Inc - Top Gas Cell - Puckett 11C-36D Tgt										
6,871.2	0.00	0.00	6,824.0	-1,575.0	-80.3	-759.0	762.9	1.00	-1.00	0.00
6,900.0	0.07	214.95	6,852.8	-1,546.2	-80.3	-759.0	762.9	0.25	0.25	0.00
7,000.0	0.32	214.95	6,952.8	-1,446.2	-80.6	-759.2	763.2	0.25	0.25	0.00
7,100.0	0.57	214.95	7,052.8	-1,346.2	-81.2	-759.7	763.7	0.25	0.25	0.00
7,200.0	0.82	214.95	7,152.7	-1,246.3	-82.2	-760.4	764.5	0.25	0.25	0.00
7,229.0	0.89	214.95	7,181.7	-1,217.3	-82.6	-760.6	764.8	0.25	0.25	0.00
7,300.0	0.89	214.95	7,252.7	-1,146.3	-83.5	-761.2	765.6	0.00	0.00	0.00
7,400.0	0.89	214.95	7,352.7	-1,046.3	-84.8	-762.1	766.6	0.00	0.00	0.00
7,500.0	0.89	214.95	7,452.7	-946.3	-86.1	-763.0	767.7	0.00	0.00	0.00
7,600.0	0.89	214.95	7,552.7	-846.3	-87.3	-763.9	768.7	0.00	0.00	0.00
7,700.0	0.89	214.95	7,652.7	-746.3	-88.6	-764.8	769.8	0.00	0.00	0.00
7,800.0	0.89	214.95	7,752.7	-646.3	-89.9	-765.7	770.8	0.00	0.00	0.00
7,900.0	0.89	214.95	7,852.7	-546.3	-91.2	-766.6	771.9	0.00	0.00	0.00
8,000.0	0.89	214.95	7,952.6	-446.4	-92.5	-767.5	773.0	0.00	0.00	0.00
8,100.0	0.89	214.95	8,052.6	-346.4	-93.7	-768.4	774.0	0.00	0.00	0.00
8,200.0	0.89	214.95	8,152.6	-246.4	-95.0	-769.3	775.1	0.00	0.00	0.00
Cameo										
8,271.4	0.89	214.95	8,224.0	-175.0	-95.9	-769.9	775.8	0.00	0.00	0.00
8,300.0	0.89	214.95	8,252.6	-146.4	-96.3	-770.2	776.1	0.00	0.00	0.00
8,400.0	0.89	214.95	8,352.6	-46.4	-97.6	-771.1	777.2	0.00	0.00	0.00

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Project:	Mesa	MD Reference:	Puckett 11C-36D KBE @ 8399.0ft (H&P 318)
Site:	NW Sec 36-T6S-R97W	North Reference:	True
Well:	Puckett 11C-36D	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #1		

Planned Survey											
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	Subsea Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
8,500.0	0.89	214.95	8,452.6	53.6	-98.8	-772.0	778.2	0.00	0.00	0.00	
8,600.0	0.89	214.95	8,552.6	153.6	-100.1	-772.9	779.3	0.00	0.00	0.00	
8,700.0	0.89	214.95	8,652.6	253.6	-101.4	-773.8	780.4	0.00	0.00	0.00	
Rollins											
8,771.4	0.89	214.95	8,724.0	325.0	-102.3	-774.4	781.1	0.00	0.00	0.00	
8,800.0	0.89	214.95	8,752.6	353.6	-102.7	-774.6	781.4	0.00	0.00	0.00	
8,900.0	0.89	214.95	8,852.5	453.5	-104.0	-775.5	782.5	0.00	0.00	0.00	
Puckett 11C-36D BHL											
8,971.5	0.89	214.95	8,924.0	525.0	-104.9	-776.2	783.2	0.00	0.00	0.00	

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target									
- Shape									
Puckett 11C-36D Tgt	0.00	0.00	6,824.0	-80.3	-759.0	1,612,592.66	2,244,422.19	39.484774	-108.177411
- plan hits target center									
- Point									
Puckett 11C-36D BHL	0.00	0.00	8,924.0	-104.9	-776.2	1,612,568.59	2,244,404.30	39.484706	-108.177472
- plan hits target center									
- Circle (radius 60.0)									

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
2,716.8	2,700.0	Surface Casing			

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
2,312.5	2,299.0	Wasatch				
4,399.8	4,369.0	Wasatch "G" Sand				
4,712.4	4,679.0	Fort Union				
5,025.0	4,989.0	Base Fort Union				
5,942.6	5,899.0	Mesaverde/Williams Fk	*			
6,871.2	6,824.0	Top Gas Cell				
8,271.4	8,224.0	Cameo				
8,771.4	8,724.0	Rollins				



Petroleum Development Corporation

Nevis Energy Services

Planning Report



Database:	RMR1 Database	Local Co-ordinate Reference:	Well Puckett 11C-36D
Company:	Petroleum Development Corp.	TVD Reference:	Puckett 11C-36D KBE @ 8399.0ft (H&P 318)
Project:	Mesa	MD Reference:	Puckett 11C-36D KBE @ 8399.0ft (H&P 318)
Site:	NW Sec 36-T6S-R97W	North Reference:	True
Well:	Puckett 11C-36D	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #1		

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
200.0	200.0	0.0	0.0	KOP @ 200'
939.1	937.0	-5.0	-47.3	EOB = 7.39° Inc
6,132.1	6,087.0	-75.3	-711.7	Start of Drop
6,871.2	6,824.0	-80.3	-759.0	EOD = 0° Inc
8,971.5	8,924.0	-104.9	-776.2	TD = 8971.5' MD