

Project: Mesa
 Site: SENW Sec 1-T7S-R97W
 Well: Puckett 23A-1D
 Wellbore: DD
 Design: Plan #2



Petroleum Development Corporation

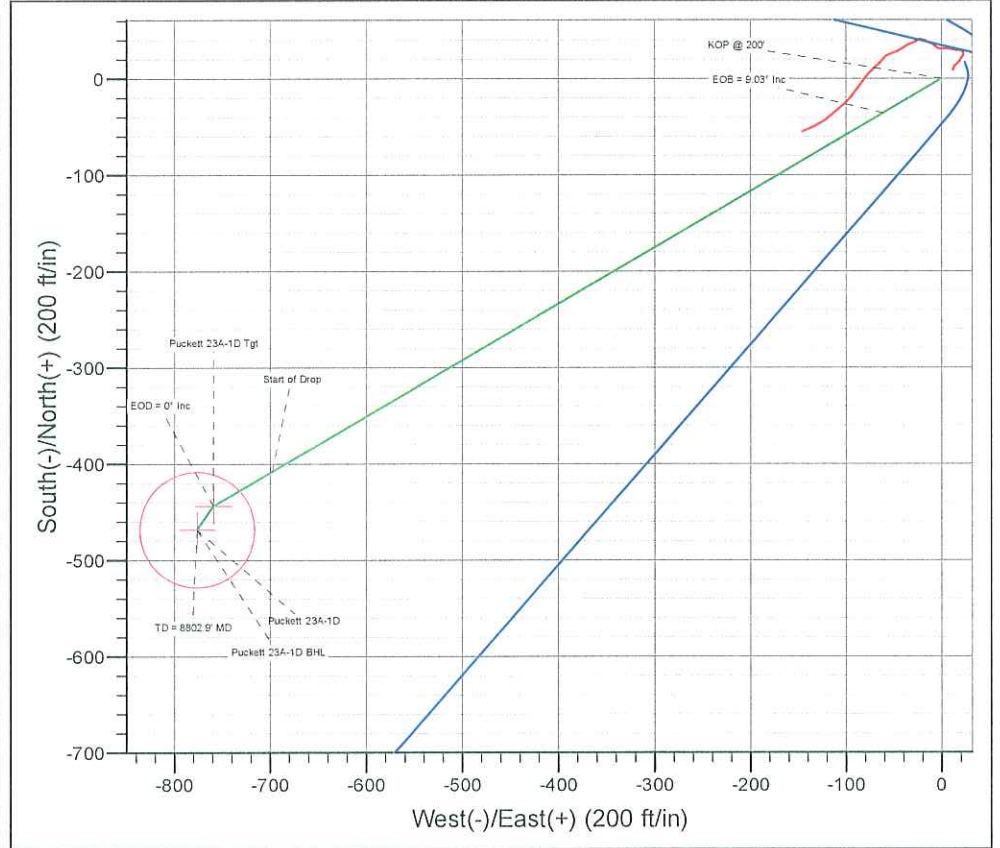
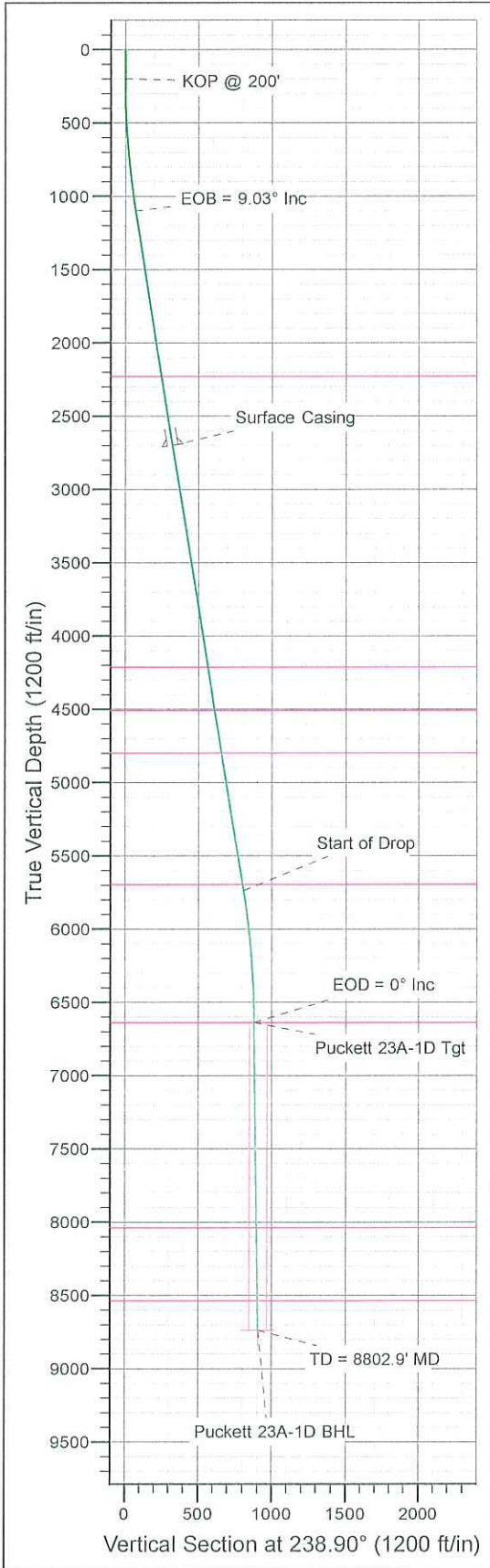
WELL DETAILS: Puckett 23A-1D

+N/-S	+E/-W	Northing	Ground Level: Easting	8218.0 Latitude	Longitude	Slot
0.0	0.0	1608829.52	2246495.22	39.474614	-108.169678	



Azimuths to True North
 Magnetic North: 10.57°

Magnetic Field
 Strength: 52308.1snT
 Dip Angle: 65.72°
 Date: 2010/05/10
 Model: IGRF2010-14



ANNOTATIONS

TVD	MD	Annotation
200.0	200.0	KOP @ 200'
1099.5	1103.3	EOB = 9.03° Inc
5737.5	5799.4	Start of Drop
6637.0	6702.7	EOD = 0° Inc
8737.0	8802.9	TD = 8802.9' MD

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
2227.0	2244.9	Wasatch
4212.0	4254.8	Wasatch "G" Sand
4507.0	4553.5	Fort Union
4797.0	4847.2	Base Fort Union
5692.0	5753.4	Mesaverde/Williams Fk
6637.0	6702.7	Top Gas Cell
8037.0	8102.9	Cameo
8537.0	8602.9	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	1103.3	9.03	239.69	1099.5	-35.9	-61.3	1.00	239.69	71.0	
4	5799.4	9.03	239.69	5737.5	-407.9	-697.9	0.00	0.00	808.3	
5	6702.7	0.00	0.00	6637.0	-443.8	-759.2	1.00	180.00	679.3	Puckett 23A-1D Tgt
6	7060.1	0.89	214.95	6994.4	-446.1	-760.8	0.25	214.95	881.9	
7	8802.9	0.89	214.95	8737.0	-468.4	-776.4	0.00	0.00	906.7	Puckett 23A-1D BHL

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
Puckett 23A-1D Tgt	6637.0	-443.8	-759.2	39.473395	-108.172367	Point
Puckett 23A-1D BHL	8737.0	-468.4	-776.4	39.473328	-108.172428	Circle (Radius: 60.0)

CASING DETAILS

TVD	MD	Name	Size
2700.0	2723.8	Surface Casing	

Plan: Plan #2 (Puckett 23A-1D/DD)

Created By: Jon Schweigert Date: 9:33, June 22 2010
 Checked: _____ Date: _____
 Reviewed: _____ Date: _____
 Approved: _____ Date: _____



Database:	RMR1 Database	Local Co-ordinate Reference:	Well Puckett 23A-1D
Company:	Petroleum Development Corp.	TVD Reference:	Puckett 23A-1D KBE @ 8242.0ft (H&P 318)
Project:	Mesa	MD Reference:	Puckett 23A-1D KBE @ 8242.0ft (H&P 318)
Site:	SENW Sec 1-T7S-R97W	North Reference:	True
Well:	Puckett 23A-1D	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #2		

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	SENW Sec 1-T7S-R97W				
Site Position:		Northing:	1,608,829.52 ft	Latitude:	39.474614
From:	Lat/Long	Easting:	2,246,495.22 ft	Longitude:	-108.169678
Position Uncertainty:	0.0 ft	Slot Radius:		Grid Convergence:	-1.68 °

Well	Puckett 23A-1D					
Well Position	+N/-S	0.0 ft	Northing:	1,608,829.52 ft	Latitude:	39.474614
	+E/-W	0.0 ft	Easting:	2,246,495.22 ft	Longitude:	-108.169678
Position Uncertainty		0.0 ft	Wellhead Elevation:		Ground Level:	8,218.0 ft

Wellbore	DD				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010-14	2010/05/10	10.57	65.72	52,308

Design	Plan #2			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	238.90

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	
1,103.3	9.03	239.69	1,099.5	-35.9	-61.3	1.00	1.00	0.00	239.69	
5,799.4	9.03	239.69	5,737.5	-407.9	-697.9	0.00	0.00	0.00	0.00	
6,702.7	0.00	0.00	6,637.0	-443.8	-759.2	1.00	-1.00	0.00	180.00	Puckett 23A-1D Tgt
7,060.1	0.89	214.95	6,994.4	-446.1	-760.8	0.25	0.25	-40.59	214.95	
8,802.9	0.89	214.95	8,737.0	-468.4	-776.4	0.00	0.00	0.00	0.00	Puckett 23A-1D BHL

Database:	RMR1 Database	Local Co-ordinate Reference:	Well Puckett 23A-1D
Company:	Petroleum Development Corp.	TVD Reference:	Puckett 23A-1D KBE @ 8242.0ft (H&P 318)
Project:	Mesa	MD Reference:	Puckett 23A-1D KBE @ 8242.0ft (H&P 318)
Site:	SENW Sec 1-T7S-R97W	North Reference:	True
Well:	Puckett 23A-1D	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #2		

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	-8,242.0	0.0	0.0	0.0	0.00	0.00	0.00	
100.0	0.00	0.00	100.0	-8,142.0	0.0	0.0	0.0	0.00	0.00	0.00	
KOP @ 200'											
200.0	0.00	0.00	200.0	-8,042.0	0.0	0.0	0.0	0.00	0.00	0.00	
300.0	1.00	239.69	300.0	-7,942.0	-0.4	-0.8	0.9	1.00	1.00	0.00	
400.0	2.00	239.69	400.0	-7,842.0	-1.8	-3.0	3.5	1.00	1.00	0.00	
500.0	3.00	239.69	499.9	-7,742.1	-4.0	-6.8	7.9	1.00	1.00	0.00	
600.0	4.00	239.69	599.7	-7,642.3	-7.0	-12.0	14.0	1.00	1.00	0.00	
700.0	5.00	239.69	699.4	-7,542.6	-11.0	-18.8	21.8	1.00	1.00	0.00	
800.0	6.00	239.69	798.9	-7,443.1	-15.8	-27.1	31.4	1.00	1.00	0.00	
900.0	7.00	239.69	898.3	-7,343.7	-21.6	-36.9	42.7	1.00	1.00	0.00	
1,000.0	8.00	239.69	997.4	-7,244.6	-28.1	-48.1	55.8	1.00	1.00	0.00	
1,100.0	9.00	239.69	1,096.3	-7,145.7	-35.6	-60.9	70.5	1.00	1.00	0.00	
EOB = 9.03° Inc											
1,103.3	9.03	239.69	1,099.5	-7,142.5	-35.9	-61.3	71.0	1.00	1.00	0.00	
1,200.0	9.03	239.69	1,195.1	-7,046.9	-43.5	-74.5	86.2	0.00	0.00	0.00	
1,300.0	9.03	239.69	1,293.8	-6,948.2	-51.4	-88.0	101.9	0.00	0.00	0.00	
1,400.0	9.03	239.69	1,392.6	-6,849.4	-59.4	-101.6	117.6	0.00	0.00	0.00	
1,500.0	9.03	239.69	1,491.3	-6,750.7	-67.3	-115.1	133.3	0.00	0.00	0.00	
1,600.0	9.03	239.69	1,590.1	-6,651.9	-75.2	-128.7	149.0	0.00	0.00	0.00	
1,700.0	9.03	239.69	1,688.9	-6,553.1	-83.1	-142.2	164.7	0.00	0.00	0.00	
1,800.0	9.03	239.69	1,787.6	-6,454.4	-91.1	-155.8	180.4	0.00	0.00	0.00	
1,900.0	9.03	239.69	1,886.4	-6,355.6	-99.0	-169.3	196.1	0.00	0.00	0.00	
2,000.0	9.03	239.69	1,985.1	-6,256.9	-106.9	-182.9	211.8	0.00	0.00	0.00	
2,100.0	9.03	239.69	2,083.9	-6,158.1	-114.8	-196.4	227.5	0.00	0.00	0.00	
2,200.0	9.03	239.69	2,182.7	-6,059.3	-122.8	-210.0	243.2	0.00	0.00	0.00	
Wasatch											
2,244.9	9.03	239.69	2,227.0	-6,015.0	-126.3	-216.1	250.3	0.00	0.00	0.00	
2,300.0	9.03	239.69	2,281.4	-5,960.6	-130.7	-223.5	258.9	0.00	0.00	0.00	
2,400.0	9.03	239.69	2,380.2	-5,861.8	-138.6	-237.1	274.6	0.00	0.00	0.00	
2,500.0	9.03	239.69	2,478.9	-5,763.1	-146.5	-250.7	290.3	0.00	0.00	0.00	
2,600.0	9.03	239.69	2,577.7	-5,664.3	-154.4	-264.2	306.0	0.00	0.00	0.00	
2,700.0	9.03	239.69	2,676.5	-5,565.5	-162.4	-277.8	321.7	0.00	0.00	0.00	
Surface Casing											
2,723.8	9.03	239.69	2,700.0	-5,542.0	-164.3	-281.0	325.4	0.00	0.00	0.00	
2,800.0	9.03	239.69	2,775.2	-5,466.8	-170.3	-291.3	337.4	0.00	0.00	0.00	
2,900.0	9.03	239.69	2,874.0	-5,368.0	-178.2	-304.9	353.1	0.00	0.00	0.00	
3,000.0	9.03	239.69	2,972.7	-5,269.3	-186.1	-318.4	368.8	0.00	0.00	0.00	
3,100.0	9.03	239.69	3,071.5	-5,170.5	-194.1	-332.0	384.5	0.00	0.00	0.00	
3,200.0	9.03	239.69	3,170.3	-5,071.7	-202.0	-345.5	400.2	0.00	0.00	0.00	
3,300.0	9.03	239.69	3,269.0	-4,973.0	-209.9	-359.1	415.9	0.00	0.00	0.00	
3,400.0	9.03	239.69	3,367.8	-4,874.2	-217.8	-372.6	431.6	0.00	0.00	0.00	
3,500.0	9.03	239.69	3,466.5	-4,775.5	-225.8	-386.2	447.3	0.00	0.00	0.00	
3,600.0	9.03	239.69	3,565.3	-4,676.7	-233.7	-399.7	463.0	0.00	0.00	0.00	
3,700.0	9.03	239.69	3,664.1	-4,577.9	-241.6	-413.3	478.7	0.00	0.00	0.00	
3,800.0	9.03	239.69	3,762.8	-4,479.2	-249.5	-426.9	494.4	0.00	0.00	0.00	
3,900.0	9.03	239.69	3,861.6	-4,380.4	-257.4	-440.4	510.1	0.00	0.00	0.00	
4,000.0	9.03	239.69	3,960.3	-4,281.7	-265.4	-454.0	525.8	0.00	0.00	0.00	
4,100.0	9.03	239.69	4,059.1	-4,182.9	-273.3	-467.5	541.5	0.00	0.00	0.00	
4,200.0	9.03	239.69	4,157.9	-4,084.1	-281.2	-481.1	557.2	0.00	0.00	0.00	
Wasatch "G" Sand											
4,254.8	9.03	239.69	4,212.0	-4,030.0	-285.6	-488.5	565.8	0.00	0.00	0.00	
4,300.0	9.03	239.69	4,256.6	-3,985.4	-289.1	-494.6	572.9	0.00	0.00	0.00	
4,400.0	9.03	239.69	4,355.4	-3,886.6	-297.1	-508.2	588.6	0.00	0.00	0.00	

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Project:	Mesa	MD Reference:	Puckett 23A-1D KBE @ 8242.0ft (H&P 318)
Site:	SEW Sec 1-T7S-R97W	North Reference:	True
Well:	Puckett 23A-1D	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #2		

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	9.03	239.69	4,454.1	-3,787.9	-305.0	-521.7	604.3	0.00	0.00	0.00	
Fort Union											
4,553.5	9.03	239.69	4,507.0	-3,735.0	-309.2	-529.0	612.7	0.00	0.00	0.00	
4,600.0	9.03	239.69	4,552.9	-3,689.1	-312.9	-535.3	620.0	0.00	0.00	0.00	
4,700.0	9.03	239.69	4,651.7	-3,590.3	-320.8	-548.8	635.7	0.00	0.00	0.00	
4,800.0	9.03	239.69	4,750.4	-3,491.6	-328.8	-562.4	651.4	0.00	0.00	0.00	
Base Fort Union											
4,847.2	9.03	239.69	4,797.0	-3,445.0	-332.5	-568.8	658.8	0.00	0.00	0.00	
4,900.0	9.03	239.69	4,849.2	-3,392.8	-336.7	-575.9	667.1	0.00	0.00	0.00	
5,000.0	9.03	239.69	4,947.9	-3,294.1	-344.6	-589.5	682.8	0.00	0.00	0.00	
5,100.0	9.03	239.69	5,046.7	-3,195.3	-352.5	-603.1	698.5	0.00	0.00	0.00	
5,200.0	9.03	239.69	5,145.5	-3,096.5	-360.4	-616.6	714.2	0.00	0.00	0.00	
5,300.0	9.03	239.69	5,244.2	-2,997.8	-368.4	-630.2	729.9	0.00	0.00	0.00	
5,400.0	9.03	239.69	5,343.0	-2,899.0	-376.3	-643.7	745.6	0.00	0.00	0.00	
5,500.0	9.03	239.69	5,441.7	-2,800.3	-384.2	-657.3	761.3	0.00	0.00	0.00	
5,600.0	9.03	239.69	5,540.5	-2,701.5	-392.1	-670.8	777.0	0.00	0.00	0.00	
5,700.0	9.03	239.69	5,639.3	-2,602.7	-400.1	-684.4	792.7	0.00	0.00	0.00	
Mesaverde/Williams Fk *											
5,753.4	9.03	239.69	5,692.0	-2,550.0	-404.3	-691.6	801.0	0.00	0.00	0.00	
Start of Drop											
5,799.4	9.03	239.69	5,737.5	-2,504.5	-407.9	-697.9	808.3	0.00	0.00	0.00	
5,800.0	9.03	239.69	5,738.0	-2,504.0	-408.0	-697.9	808.4	1.00	-1.00	0.00	
5,900.0	8.03	239.69	5,836.9	-2,405.1	-415.5	-710.7	823.2	1.00	-1.00	0.00	
6,000.0	7.03	239.69	5,936.0	-2,306.0	-422.1	-722.0	836.3	1.00	-1.00	0.00	
6,100.0	6.03	239.69	6,035.4	-2,206.6	-427.8	-731.9	847.6	1.00	-1.00	0.00	
6,200.0	5.03	239.69	6,134.9	-2,107.1	-432.7	-740.2	857.3	1.00	-1.00	0.00	
6,300.0	4.03	239.69	6,234.6	-2,007.4	-436.7	-747.0	865.2	1.00	-1.00	0.00	
6,400.0	3.03	239.69	6,334.4	-1,907.6	-439.8	-752.3	871.3	1.00	-1.00	0.00	
6,500.0	2.03	239.69	6,434.3	-1,807.7	-442.0	-756.1	875.7	1.00	-1.00	0.00	
6,600.0	1.03	239.69	6,534.3	-1,707.7	-443.3	-758.4	878.4	1.00	-1.00	0.00	
6,700.0	0.03	239.69	6,634.3	-1,607.7	-443.8	-759.2	879.3	1.00	-1.00	0.00	
EOD = 0° Inc - Top Gas Cell - Puckett 23A-1D Tgt											
6,702.7	0.00	0.00	6,637.0	-1,605.0	-443.8	-759.2	879.3	1.00	-1.00	0.00	
6,800.0	0.24	214.95	6,734.3	-1,507.7	-444.0	-759.3	879.5	0.25	0.25	0.00	
6,900.0	0.49	214.95	6,834.3	-1,407.7	-444.5	-759.7	880.1	0.25	0.25	0.00	
7,000.0	0.74	214.95	6,934.3	-1,307.7	-445.4	-760.3	881.1	0.25	0.25	0.00	
7,060.1	0.89	214.95	6,994.4	-1,247.6	-446.1	-760.8	881.9	0.25	0.25	0.00	
7,100.0	0.89	214.95	7,034.3	-1,207.7	-446.6	-761.2	882.4	0.00	0.00	0.00	
7,200.0	0.89	214.95	7,134.3	-1,107.7	-447.9	-762.0	883.9	0.00	0.00	0.00	
7,300.0	0.89	214.95	7,234.2	-1,007.8	-449.1	-762.9	885.3	0.00	0.00	0.00	
7,400.0	0.89	214.95	7,334.2	-907.8	-450.4	-763.8	886.7	0.00	0.00	0.00	
7,500.0	0.89	214.95	7,434.2	-807.8	-451.7	-764.7	888.1	0.00	0.00	0.00	
7,600.0	0.89	214.95	7,534.2	-707.8	-453.0	-765.6	889.6	0.00	0.00	0.00	
7,700.0	0.89	214.95	7,634.2	-607.8	-454.3	-766.5	891.0	0.00	0.00	0.00	
7,800.0	0.89	214.95	7,734.2	-507.8	-455.5	-767.4	892.4	0.00	0.00	0.00	
7,900.0	0.89	214.95	7,834.2	-407.8	-456.8	-768.3	893.8	0.00	0.00	0.00	
8,000.0	0.89	214.95	7,934.2	-307.8	-458.1	-769.2	895.3	0.00	0.00	0.00	
8,100.0	0.89	214.95	8,034.1	-207.9	-459.4	-770.1	896.7	0.00	0.00	0.00	
Cameo											
8,102.9	0.89	214.95	8,037.0	-205.0	-459.4	-770.1	896.7	0.00	0.00	0.00	
8,200.0	0.89	214.95	8,134.1	-107.9	-460.7	-771.0	898.1	0.00	0.00	0.00	
8,300.0	0.89	214.95	8,234.1	-7.9	-461.9	-771.9	899.5	0.00	0.00	0.00	
8,400.0	0.89	214.95	8,334.1	92.1	-463.2	-772.8	901.0	0.00	0.00	0.00	

Database:	RMR1 Database	Local Co-ordinate Reference:	Well Puckett 23A-1D
Company:	Petroleum Development Corp.	TVD Reference:	Puckett 23A-1D KBE @ 8242.0ft (H&P 318)
Project:	Mesa	MD Reference:	Puckett 23A-1D KBE @ 8242.0ft (H&P 318)
Site:	SENW Sec 1-T7S-R97W	North Reference:	True
Well:	Puckett 23A-1D	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #2		

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	8,434.1	192.1	-464.5	-773.7	902.4	0.00	0.00	0.00	
8,600.0	0.89	214.95	8,534.1	292.1	-465.8	-774.6	903.8	0.00	0.00	0.00	
Rollins											
8,602.9	0.89	214.95	8,537.0	295.0	-465.8	-774.6	903.8	0.00	0.00	0.00	
8,700.0	0.89	214.95	8,634.1	392.1	-467.0	-775.4	905.2	0.00	0.00	0.00	
8,800.0	0.89	214.95	8,734.1	492.1	-468.3	-776.3	906.7	0.00	0.00	0.00	
TD = 8802.9' MD - Puckett 23A-1D BHL											
8,802.9	0.89	214.95	8,737.0	495.0	-468.4	-776.4	906.7	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	
Puckett 23A-1D Tgt - hit/miss target - Shape - Point	0.00	0.00	6,637.0	-443.8	-759.2	1,608,408.22	2,245,723.31	39.473396	-108.172367	
Puckett 23A-1D BHL - plan hits target center - Circle (radius 60.0)	0.00	0.00	8,737.0	-468.4	-776.4	1,608,384.18	2,245,705.43	39.473328	-108.172428	

Casing Points						
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")		
2,723.8	2,700.0	Surface Casing				

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
2,244.9	2,227.0	Wasatch				
4,254.8	4,212.0	Wasatch "G" Sand				
4,553.5	4,507.0	Fort Union				
4,847.2	4,797.0	Base Fort Union				
5,753.4	5,692.0	Mesaverde/Williams Fk	*			
6,702.7	6,637.0	Top Gas Cell				
8,102.9	8,037.0	Cameo				
8,602.9	8,537.0	Rollins				

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Project:	Mesa	MD Reference:	Puckett 23A-1D KBE @ 8242.0ft (H&P 318)
Site:	SENW Sec 1-T7S-R97W	North Reference:	True
Well:	Puckett 23A-1D	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #2		

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'
1,103.3	1,099.5	-35.9	-61.3	EOB = 9.03° Inc
5,799.4	5,737.5	-407.9	-697.9	Start of Drop
6,702.7	6,637.0	-443.8	-759.2	EOD = 0° Inc
8,802.9	8,737.0	-468.4	-776.4	TD = 8802.9' MD