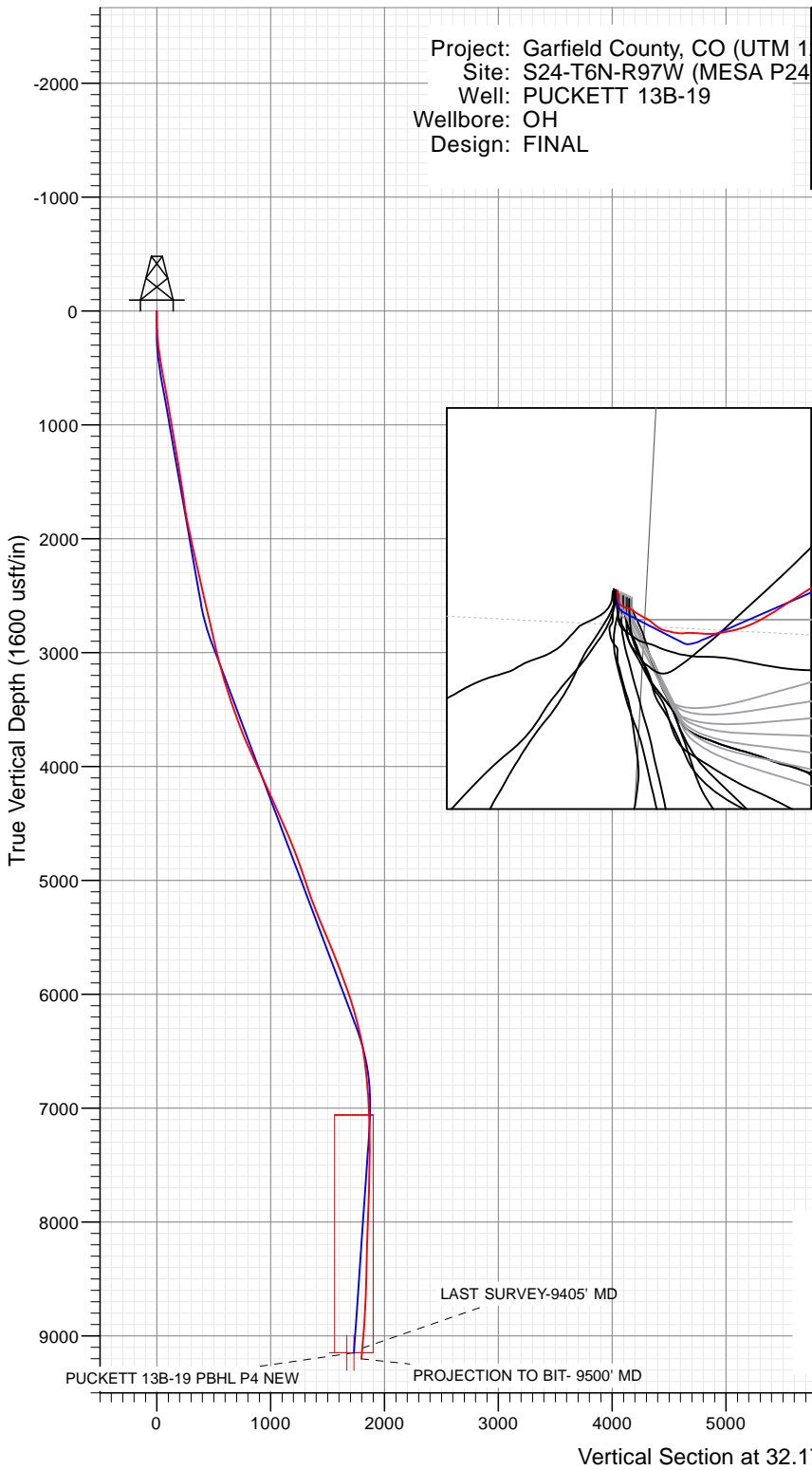




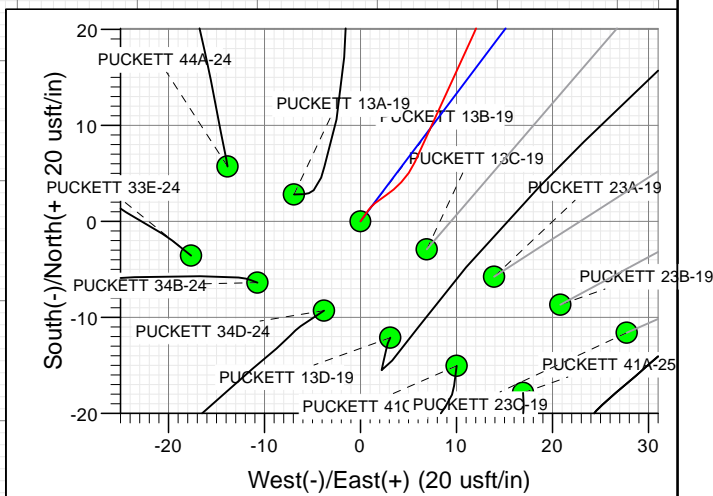
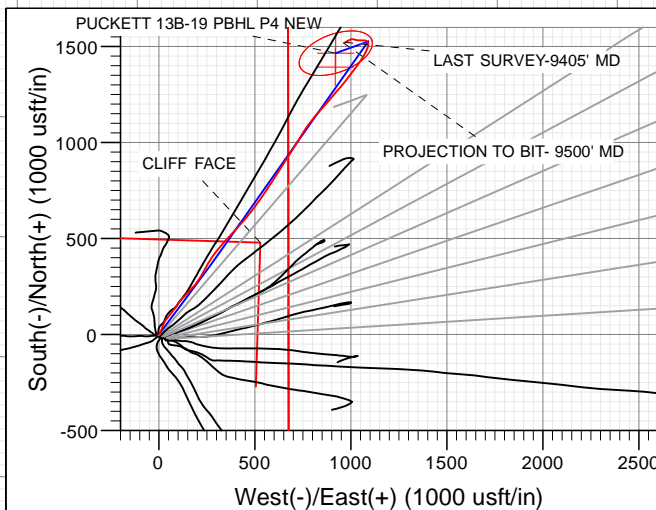
SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	
3	533.33	10.00	36.92	531.64	23.20	17.43	3.00	36.92	28.92	
4	2600.00	10.00	36.92	2566.91	310.11	233.00	0.00	0.00	386.56	
5	2955.21	20.65	35.17	2909.00	386.18	287.76	3.00	-3.34	480.10	
6	6565.67	20.65	35.17	6287.55	1426.86	1021.10	0.00	0.00	1751.47	
7	7253.91	0.00	0.00	6961.00	1527.14	1091.76	3.00	180.00	1873.97	
8	7504.54	5.01	250.00	7211.31	1523.39	1081.46	2.00	250.00	1865.32	
9	9449.67	5.01	250.00	9149.00	1465.27	921.76	0.00	0.00	1731.08	PUCKETT 13B-19 PBHL P4 NEW



FINAL
PUCKETT 13B-19
32557 185004 LR
30' KB @ 8181.00usf
Ground Level @ 8151.00
NAD 1927 - Western US
Well PUCKETT 13B-19 - Slot A9, True North

Type	Target	No Target (Freehand)	Azimuth	Origin Type	N/S	E/W	From TVD
Name	TVD	+N/-S	+E/-W	Latitude	Longitude		
PUCKETT 13B-19 PBHL	9149.00	1303.20	1311.24	39.506564	-108.156514		
PUCKETT 13B-19 PBHL ORIGINAL	9149.00	1392.80	919.47	39.506830	-108.157901		
PUCKETT 13B-19 PBHL P2	9149.00	1392.80	919.47	39.506830	-108.157901		
PUCKETT 13B-19 PBHL P4 NEW	9149.00	1465.27	921.76	39.507029	-108.157893		



Azimuths to True North
Magnetic North: 9.65°

Magnetic Field
Strength: 51652.8snT
Dip Angle: 65.80°
Date: 1/5/2018
Model: HDGM



WELL DETAILS: PUCKETT 13B-19

+N/-S	+E/-W	Northing	Ground Level:	8151.00	Latitude	Longitude
0.00	0.00	14357706.40	Easting	2441254.40	39.503007	-108.161159

Caerus Oil & Gas

Garfield County, CO (UTM 12N)

S24-T6N-R97W (MESA P24)

PUCKETT 13B-19 - Slot A9

OH

Design: FINAL

Standard Survey Report

11 January, 2018

Cathedral Energy Services

Survey Report

Company:	Caerus Oil & Gas	Local Co-ordinate Reference:	Well PUCKETT 13B-19 - Slot A9
Project:	Garfield County, CO (UTM 12N)	TVD Reference:	30' KB @ 8181.00usft
Site:	S24-T6N-R97W (MESA P24)	MD Reference:	30' KB @ 8181.00usft
Well:	PUCKETT 13B-19	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	Database:	USA EDM 5000 Multi Users DB

Project	Garfield County, CO (UTM 12N)		
Map System:	Universal Transverse Mercator (US Survey Feet)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 - Western US		
Map Zone:	Zone 12N (114 W to 108 W)		

Site	S24-T6N-R97W (MESA P24)		
Site Position:		Northing:	14,357,707.60 usft
From:	Map	Easting:	2,441,222.80 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	39.503014
		Longitude:	-108.161271
		Grid Convergence:	1.81 °

Well	PUCKETT 13B-19 - Slot A9		
Well Position	+N/-S	0.00 usft	Northing:
	+E/-W	0.00 usft	Easting:
Position Uncertainty	0.00 usft	Wellhead Elevation:	0.00 usft
		Latitude:	39.503007
		Longitude:	-108.161159
		Ground Level:	8,151.00 usft

Wellbore	OH		
Magnetics	Model Name	Sample Date	Declination
			(°)
	HDGM	1/5/2018	9.65
			(°)
			65.80
			51,652.80000000

Design	FINAL		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.00	0.00	0.00
			32.17

Survey Program	Date	1/11/2018		
From	To	Survey (Wellbore)	Tool Name	Description
(usft)	(usft)			
136.00	2,456.00	Survey #1 (OH)	INC+TREND	Inclinometer + known azi trend
2,538.00	9,500.00	Survey #2 (OH)	MWD+HDGM	OWSG MWD + HDGM

Survey										
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Vertical	Dogleg	Build	Turn	
Depth	(°)	(°)	Depth	(usft)	(usft)	Section	Rate	Rate	Rate	
(usft)			(usft)			(usft)	(°/100usft)	(°/100usft)	(°/100usft)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
136.00	1.23	35.14	135.99	1.19	0.84	1.46	0.90	0.90	0.00	
167.00	2.37	48.32	166.97	1.89	1.51	2.41	3.89	3.68	42.52	
198.00	3.16	58.08	197.94	2.77	2.71	3.79	2.96	2.55	31.48	
229.00	4.44	43.40	228.87	4.09	4.26	5.74	5.15	4.13	-47.35	
260.00	4.97	25.38	259.77	6.18	5.66	8.25	5.04	1.71	-58.13	
290.00	6.11	24.77	289.63	8.80	6.89	11.12	3.81	3.80	-2.03	
383.00	8.39	24.42	381.88	19.48	11.77	22.75	2.45	2.45	-0.38	
475.00	9.76	20.55	472.72	32.89	17.28	37.04	1.63	1.49	-4.21	
567.00	10.64	20.37	563.27	48.15	22.98	52.99	0.96	0.96	-0.20	

Cathedral Energy Services

Survey Report

Company:	Caerus Oil & Gas	Local Co-ordinate Reference:	Well PUCKETT 13B-19 - Slot A9
Project:	Garfield County, CO (UTM 12N)	TVD Reference:	30' KB @ 8181.00usft
Site:	S24-T6N-R97W (MESA P24)	MD Reference:	30' KB @ 8181.00usft
Well:	PUCKETT 13B-19	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	Database:	USA EDM 5000 Multi Users DB

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)
662.00	10.94	24.33	656.59	64.59	29.74	70.51	0.84	0.32	4.17
757.00	10.81	38.30	749.90	79.80	38.98	88.30	2.77	-0.14	14.71
851.00	9.19	41.73	842.47	92.32	49.44	104.47	1.84	-1.72	3.65
946.00	9.14	41.12	936.26	103.66	59.45	119.40	0.12	-0.05	-0.64
1,041.00	9.40	35.40	1,030.02	115.67	68.91	134.60	1.01	0.27	-6.02
1,135.00	9.62	36.81	1,122.73	128.22	78.06	150.10	0.34	0.23	1.50
1,230.00	9.84	34.61	1,216.36	141.25	87.43	166.12	0.45	0.23	-2.32
1,325.00	9.98	32.24	1,309.94	154.90	96.43	182.46	0.45	0.15	-2.49
1,420.00	9.45	32.59	1,403.58	168.43	105.02	198.49	0.56	-0.56	0.37
1,514.00	8.79	42.17	1,496.40	180.26	114.00	213.28	1.76	-0.70	10.19
1,609.00	8.70	49.90	1,590.30	190.27	124.37	227.27	1.24	-0.09	8.14
1,703.00	7.87	43.66	1,683.32	199.50	134.25	240.35	1.30	-0.88	-6.64
1,797.00	9.98	41.55	1,776.17	210.25	144.10	254.70	2.27	2.24	-2.24
1,892.00	11.51	44.46	1,869.51	223.18	156.20	272.08	1.71	1.61	3.06
1,986.00	12.74	42.52	1,961.41	237.51	169.77	291.44	1.38	1.31	-2.06
2,080.00	12.00	39.01	2,053.23	252.75	182.93	311.34	1.12	-0.79	-3.73
2,174.00	11.95	39.53	2,145.18	267.85	195.27	330.69	0.13	-0.05	0.55
2,268.00	12.92	34.88	2,236.98	283.97	207.48	350.84	1.48	1.03	-4.95
2,362.00	12.61	29.51	2,328.66	301.53	218.54	371.59	1.30	-0.33	-5.71
2,456.00	12.61	29.25	2,420.39	319.41	228.61	392.09	0.06	0.00	-0.28
2,538.00	14.02	29.16	2,500.18	335.89	237.82	410.95	1.72	1.72	-0.11
2,632.00	13.45	29.51	2,591.49	355.35	248.76	433.24	0.61	-0.61	0.37
2,726.00	12.96	30.57	2,683.01	373.94	259.50	454.70	0.58	-0.52	1.13
2,820.00	12.66	31.80	2,774.67	391.77	270.29	475.53	0.43	-0.32	1.31
2,914.00	12.61	36.72	2,866.40	408.75	281.85	496.06	1.15	-0.05	5.23
3,008.00	13.23	37.25	2,958.02	425.54	294.50	517.01	0.67	0.66	0.56
3,102.00	14.37	39.18	3,049.30	443.14	308.38	539.30	1.31	1.21	2.05
3,196.00	15.60	39.80	3,140.10	461.89	323.84	563.40	1.32	1.31	0.66
3,290.00	16.57	43.05	3,230.42	481.40	341.08	589.09	1.41	1.03	3.46
3,384.00	17.31	42.70	3,320.34	501.47	359.72	616.01	0.79	0.79	-0.37
3,478.00	18.94	41.55	3,409.68	523.17	379.32	644.81	1.78	1.73	-1.22
3,572.00	20.00	42.08	3,498.30	546.52	400.21	675.70	1.14	1.13	0.56
3,666.00	20.61	42.43	3,586.46	570.66	422.15	707.81	0.66	0.65	0.37
3,761.00	21.18	41.03	3,675.21	595.95	444.69	741.22	0.80	0.60	-1.47
3,856.00	22.76	39.18	3,763.31	623.14	467.57	776.42	1.82	1.66	-1.95
3,950.00	24.13	37.16	3,849.55	652.55	490.67	813.61	1.69	1.46	-2.15
4,045.00	24.96	35.84	3,935.96	684.27	514.13	852.96	1.05	0.87	-1.39
4,140.00	24.39	34.61	4,022.29	716.67	537.01	892.56	0.81	-0.60	-1.29
4,234.00	24.70	32.94	4,107.80	749.12	558.71	931.59	0.81	0.33	-1.78
4,329.00	24.65	34.35	4,194.12	782.14	580.68	971.23	0.62	-0.05	1.48
4,423.00	24.08	33.47	4,279.75	814.32	602.32	1,009.99	0.72	-0.61	-0.94
4,518.00	25.01	32.15	4,366.17	847.49	623.70	1,049.45	1.14	0.98	-1.39
4,613.00	24.13	32.24	4,452.56	880.92	644.74	1,088.95	0.93	-0.93	0.09

Cathedral Energy Services

Survey Report

Company:	Caerus Oil & Gas	Local Co-ordinate Reference:	Well PUCKETT 13B-19 - Slot A9
Project:	Garfield County, CO (UTM 12N)	TVD Reference:	30' KB @ 8181.00usft
Site:	S24-T6N-R97W (MESA P24)	MD Reference:	30' KB @ 8181.00usft
Well:	PUCKETT 13B-19	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	Database:	USA EDM 5000 Multi Users DB

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)	
4,707.00	23.12	32.50	4,538.68	912.73	664.91	1,126.62	1.08	-1.07	0.28	
4,802.00	22.24	32.24	4,626.34	943.67	684.52	1,163.25	0.93	-0.93	-0.27	
4,897.00	21.93	32.41	4,714.37	973.85	703.62	1,198.97	0.33	-0.33	0.18	
4,991.00	20.44	31.89	4,802.01	1,002.61	721.70	1,232.94	1.60	-1.59	-0.55	
5,085.00	19.47	31.10	4,890.37	1,029.96	738.46	1,265.02	1.07	-1.03	-0.84	
5,179.00	18.28	32.50	4,979.31	1,055.81	754.48	1,295.42	1.35	-1.27	1.49	
5,273.00	18.55	34.52	5,068.50	1,080.56	770.87	1,325.10	0.74	0.29	2.15	
5,366.00	20.04	37.25	5,156.27	1,105.44	788.90	1,355.76	1.87	1.60	2.94	
5,460.00	21.97	40.24	5,244.03	1,131.68	810.01	1,389.22	2.35	2.05	3.18	
5,554.00	22.19	40.59	5,331.13	1,158.59	832.92	1,424.19	0.27	0.23	0.37	
5,648.00	22.37	41.99	5,418.12	1,185.36	856.44	1,459.37	0.60	0.19	1.49	
5,742.00	23.34	41.91	5,504.73	1,212.51	880.84	1,495.35	1.03	1.03	-0.09	
5,835.00	22.50	41.03	5,590.39	1,239.65	904.83	1,531.09	0.98	-0.90	-0.95	
5,929.00	22.32	39.45	5,677.29	1,267.00	927.98	1,566.57	0.67	-0.19	-1.68	
6,023.00	21.09	39.71	5,764.63	1,293.80	950.13	1,601.04	1.31	-1.31	0.28	
6,117.00	20.61	38.39	5,852.47	1,319.77	971.21	1,634.25	0.71	-0.51	-1.40	
6,210.00	19.47	38.13	5,939.84	1,344.80	990.94	1,665.94	1.23	-1.23	-0.28	
6,304.00	17.93	38.04	6,028.87	1,368.52	1,009.53	1,695.92	1.64	-1.64	-0.10	
6,398.00	16.83	37.07	6,118.58	1,390.77	1,026.65	1,723.87	1.21	-1.17	-1.03	
6,491.00	15.43	34.52	6,207.92	1,411.71	1,041.78	1,749.65	1.69	-1.51	-2.74	
6,585.00	13.80	33.47	6,298.88	1,431.36	1,055.05	1,773.35	1.76	-1.73	-1.12	
6,679.00	11.73	30.39	6,390.55	1,448.96	1,066.07	1,794.11	2.32	-2.20	-3.28	
6,772.00	9.32	27.84	6,481.98	1,463.78	1,074.37	1,811.07	2.64	-2.59	-2.74	
6,866.00	7.73	24.42	6,574.94	1,476.26	1,080.54	1,824.93	1.77	-1.69	-3.64	
6,960.00	6.11	23.27	6,668.25	1,486.62	1,085.13	1,836.14	1.73	-1.72	-1.22	
7,053.00	5.10	17.65	6,760.80	1,495.10	1,088.33	1,845.03	1.23	-1.09	-6.04	
7,148.00	4.40	11.94	6,855.48	1,502.69	1,090.37	1,852.53	0.89	-0.74	-6.01	
7,243.00	3.56	8.51	6,950.25	1,509.17	1,091.56	1,858.66	0.92	-0.88	-3.61	
7,337.00	3.34	350.75	7,044.08	1,514.76	1,091.55	1,863.38	1.16	-0.23	-18.89	
7,620.00	2.42	304.70	7,326.75	1,526.30	1,085.31	1,869.83	0.85	-0.33	-16.27	
7,902.00	3.08	282.99	7,608.44	1,531.39	1,073.04	1,867.60	0.43	0.23	-7.70	
8,184.00	4.75	260.14	7,889.78	1,531.10	1,054.15	1,857.29	0.80	0.59	-8.10	
8,467.00	4.00	292.83	8,172.00	1,532.92	1,033.50	1,847.85	0.91	-0.27	11.55	
8,749.00	4.22	276.75	8,453.28	1,537.96	1,014.13	1,841.80	0.41	0.08	-5.70	
8,937.00	2.86	259.70	8,640.93	1,537.93	1,002.65	1,835.66	0.91	-0.72	-9.07	
9,218.00	4.88	238.34	8,921.28	1,530.40	985.57	1,820.20	0.87	0.72	-7.60	
9,405.00	5.54	239.84	9,107.51	1,521.69	971.00	1,805.06	0.36	0.35	0.80	
LAST SURVEY-9405' MD										
9,500.00	5.54	239.84	9,202.07	1,517.09	963.07	1,796.94	0.00	0.00	0.00	
PROJECTION TO BIT- 9500' MD										

Cathedral Energy Services

Survey Report

Company:	Caerus Oil & Gas	Local Co-ordinate Reference:	Well PUCKETT 13B-19 - Slot A9
Project:	Garfield County, CO (UTM 12N)	TVD Reference:	30' KB @ 8181.00usft
Site:	S24-T6N-R97W (MESA P24)	MD Reference:	30' KB @ 8181.00usft
Well:	PUCKETT 13B-19	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	Database:	USA EDM 5000 Multi Users DB

Design Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
- Shape									
PUCKETT 13B-19 PBHL	0.00	0.00	9,149.00	1,392.80	919.47	14,359,127.50	2,442,129.50	39.506830	-108.157902
- actual wellpath misses target center by 135.28usft at 9456.85usft MD (9159.12 TVD, 1519.18 N, 966.67 E)									
- Point									
PUCKETT 13B-19 PBHL	0.00	0.00	9,149.00	1,465.27	921.76	14,359,200.00	2,442,129.50	39.507029	-108.157894
- actual wellpath misses target center by 70.80usft at 9453.14usft MD (9155.43 TVD, 1519.36 N, 966.98 E)									
- Ellipse (radii L200.00 W100.00 on 250.00 azi)									

Design Annotations					
Measured Depth	Vertical Depth	Local Coordinates			
(usft)	(usft)	+N/-S	+E/-W	Comment	
(usft)	(usft)	(usft)	(usft)		
9,405.00	9,107.51	1,521.69	971.00	LAST SURVEY-9405' MD	
9,500.00	9,202.07	1,517.09	963.07	PROJECTION TO BIT- 9500' MD	

Checked By: _____ Approved By: _____ Date: _____