

ANADARKO PETROLEUM CORP

WELD COUNTY (NAD 83)

SW SW SEC 1 T1N R68W 6th P.M. (1-1HZ TO 1-8HZ)

CARSON 1-6HZ

JOB #2019-401-461

01 July, 2019

Survey: FINAL SURVEYS





Project: WELD COUNTY (NAD 83)
 Site: SW SW SEC 1 T1N R68W 6th P.M. (1-1HZ TO 1-8HZ)
 Well: CARSON 1-6HZ
 Wellbore: JOB #2019-401-461
 Design: FINAL SURVEYS

ANNOTATIONS

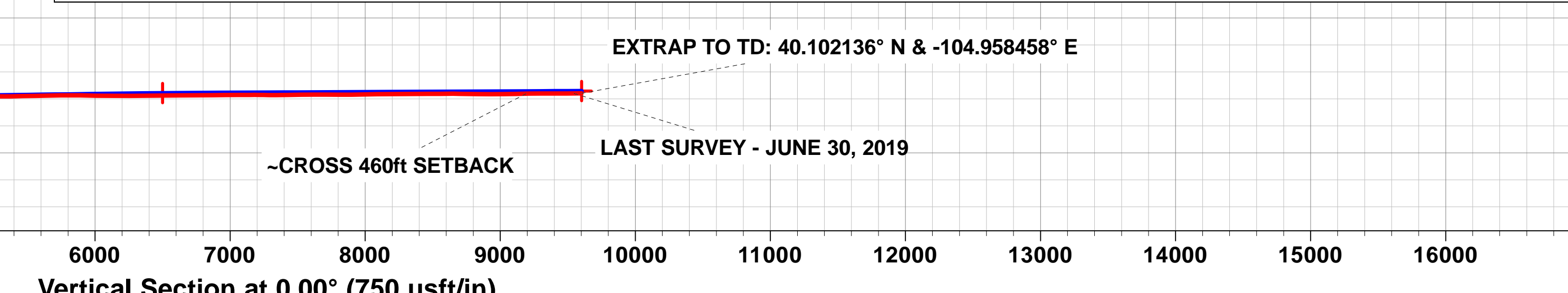
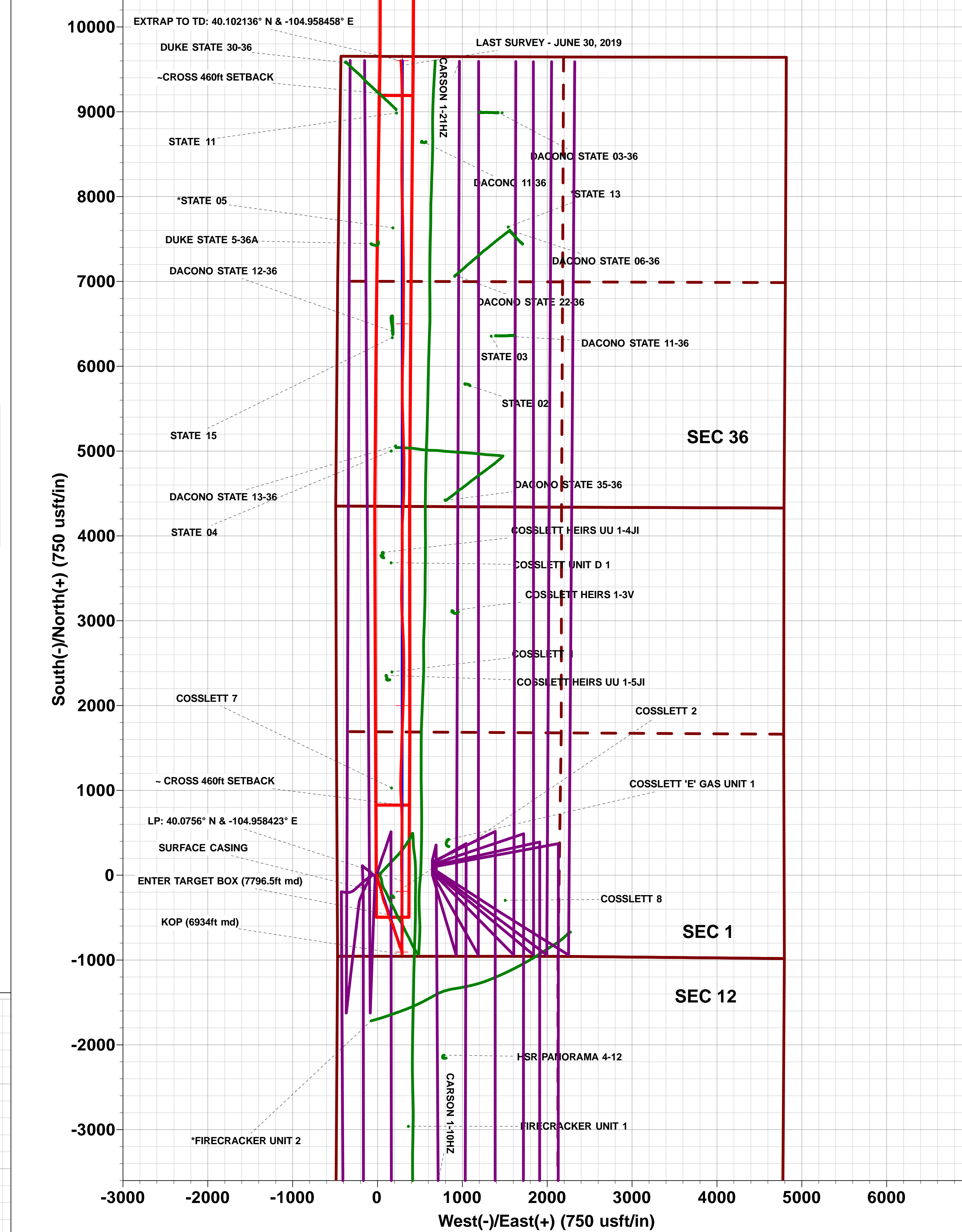
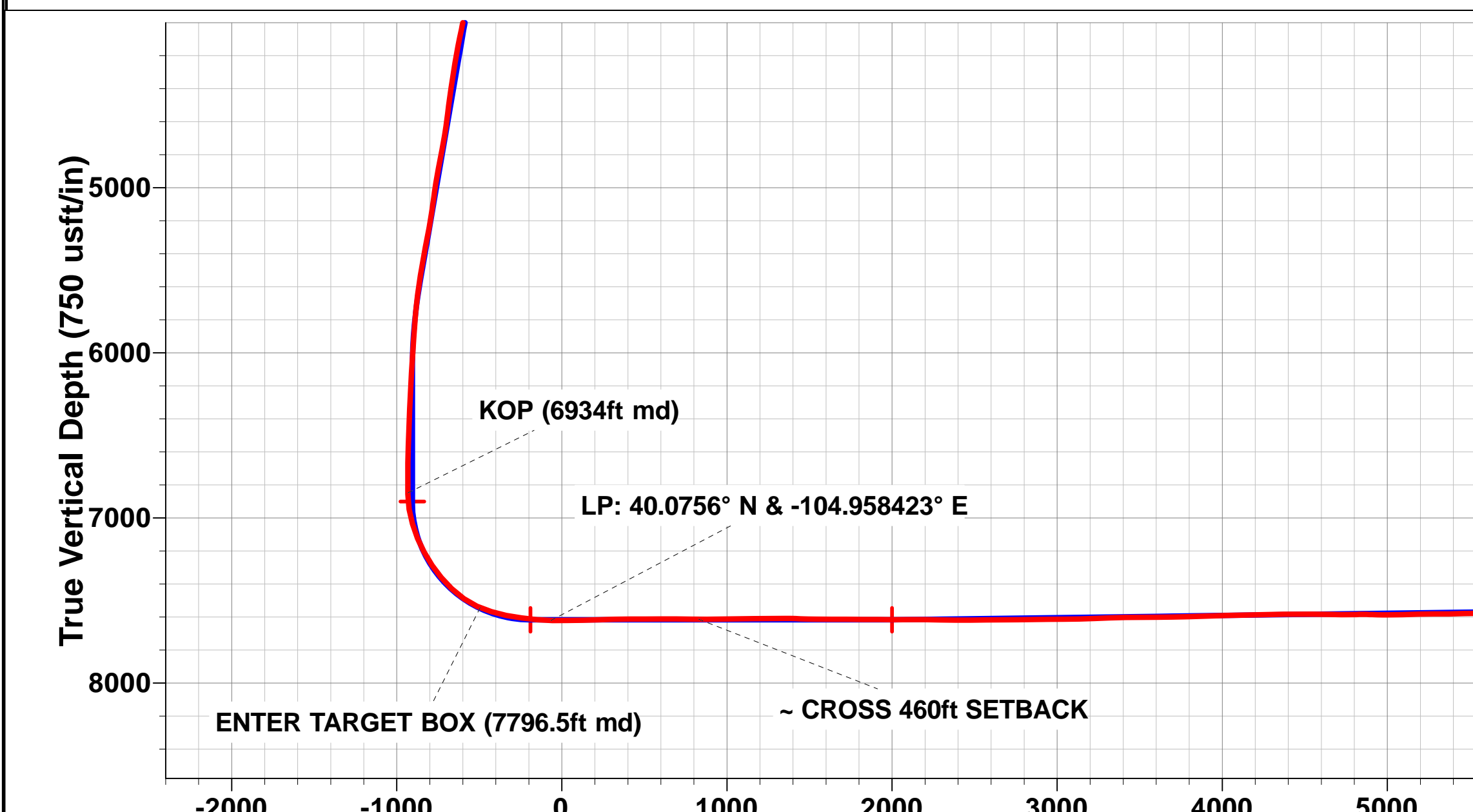
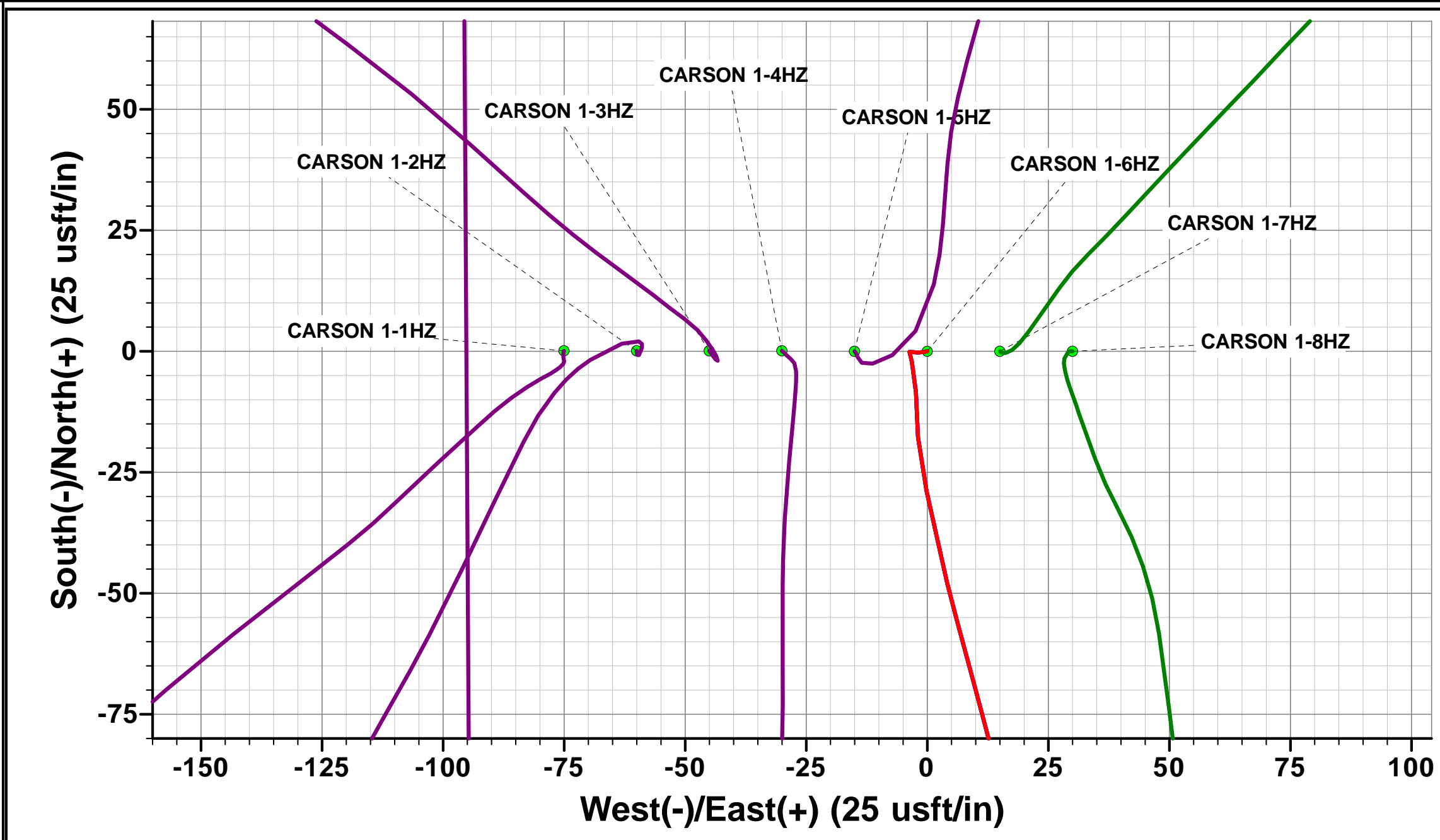
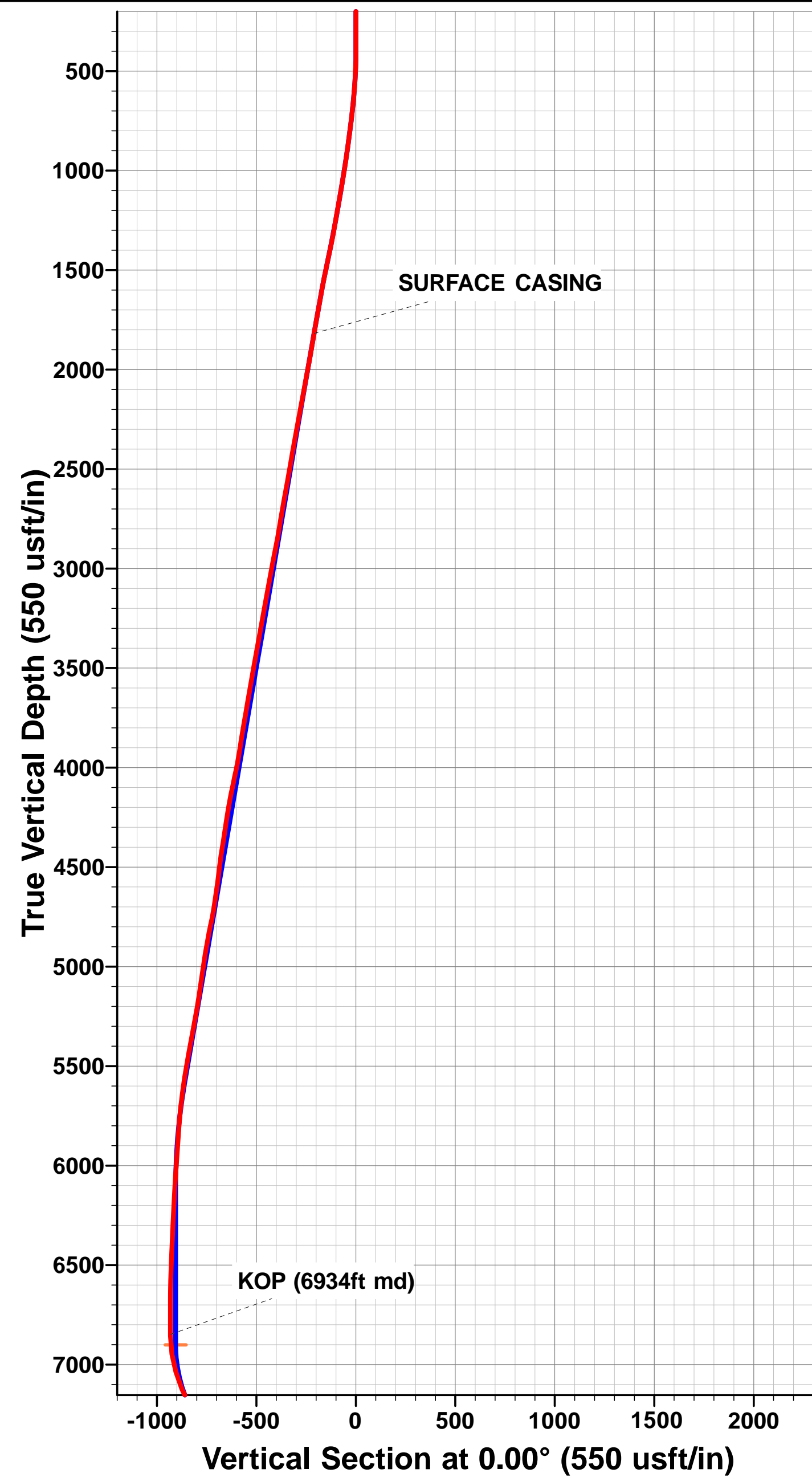
TVD	MD	Inc	Azi	+N/-S	+E/-W	VSec	Departure	Annotation
1818.0	1837.0	10.11	166.31	-210.5	52.4	-210.5	222.1	SURFACE CASING
6846.3	6934.0	0.39	341.12	-932.5	289.9	-932.5	987.7	KOP (6934ft md)
7543.3	7796.5	67.40	357.22	-495.5	287.1	-495.5	1425.6	ENTER TARGET BOX (7796.5ft md)
7621.3	8234.0	89.37	359.48	-67.2	286.3	-67.2	1853.7	LP: 40.0756° N & -104.958423° E
7613.4	9129.4	89.67	356.93	827.8	282.8	827.8	2748.9	~ CROSS 460ft SETBACK
7561.4	17497.2	91.44	359.28	9191.8	290.1	9191.8	11115.6	~ CROSS 460ft SETBACK
7559.2	17851.0	90.88	357.05	9545.4	279.2	9545.4	11469.3	LAST SURVEY - JUNE 30, 2019
7558.4	17906.0	90.88	357.05	9600.3	276.3	9600.3	11524.3	EXTRAP TO TD: 40.102136° N & -104.958458° E

AS DRILLED LOCAL COORDINATES:

SHL: 956ft FSL & 475ft FWL Sec 1
 HEEL: 888.61ft FSL & 760.4ft FWL Sec 1
 BHL: 51.3ft FNL & 707.3ft FWL Sec 36

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
BHL - CARSON 1-6HZ (P3)	7542.0	9601.6	293.0	40° 6' 7.704 N	104° 57' 30.236 W
HEEL - CARSON 1-6HZ (P3)	7617.0	-189.8	288.9	40° 4' 30.943 N	104° 57' 30.290 W
KOP - CARSON 1-6HZ (P3)	6900.8	-906.0	288.6	40° 4' 23.866 N	104° 57' 30.293 W
TGT 1 - CARSON 1-6HZ (P3)	7617.0	2000.0	289.7	40° 4' 52.583 N	104° 57' 30.280 W
TGT 2 - CARSON 1-6HZ (P3)	7557.0	6500.0	291.2	40° 5' 37.053 N	104° 57' 30.259 W



Survey Report



Company:	ANADARKO PETROLEUM CORP	Local Co-ordinate Reference:	Well CARSON 1-6HZ
Project:	WELD COUNTY (NAD 83)	TVD Reference:	KB 20' @ 5032.0usft (PD461)
Site:	SW SW SEC 1 T1N R68W 6th P.M. (	MD Reference:	KB 20' @ 5032.0usft (PD461)
Well:	CARSON 1-6HZ	North Reference:	True
Wellbore:	JOB #2019-401-461	Survey Calculation Method:	Minimum Curvature
Design:	FINAL SURVEYS	Database:	Database 1

Project	WELD COUNTY (NAD 83)		
Map System:	Universal Transverse Mercator (US Survey Fee	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Zone 13N (108 W to 102 W)		Using geodetic scale factor

Site	SW SW SEC 1 T1N R68W 6th P.M. (1-1HZ TO 1-8HZ)		
Site Position:		Northing:	14,554,331.98 usft
From:	Lat/Long	Easting:	1,651,686.27 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16"
		Latitude:	40° 4' 32.820 N
		Longitude:	104° 57' 34.971 W
		Grid Convergence:	0.03 °

Well	CARSON 1-6HZ		
Well Position	+N-S	0.0 usft	Northing:
	+E-W	0.0 usft	Easting:
Position Uncertainty		0.0 usft	Wellhead Elevation:
			usft
			Latitude:
			40° 4' 32.819 N
			Longitude:
			104° 57' 34.006 W
			Ground Level:
			5,012.0 usft

Wellbore	JOB #2019-401-461				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	11/04/2019	8.09	66.52	51,995

Design	FINAL SURVEYS			
Audit Notes:				
Version:	1.0	Phase:	ACTUAL	Tie On Depth:
				0.0
Vertical Section:	Depth From (TVD) (usft)	+N-S (usft)	+E-W (usft)	Direction (°)
	0.0	0.0	0.0	0.00

Survey Program	Date	01/07/2019		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
126.0	17,906.0	FINAL SURVEYS (JOB #2019-401-461)	APC_ISCWSA REV 2 MM Fixed:v2:crustal field declination	

Survey											
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Subsea Depth (usft)	+N-S (usft)	+E-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
0.0	0.00	0.00	0.0	5,032.0	0.0	0.0	0.0	0.00	0.00	0.00	
126.0	0.57	260.16	126.0	4,906.0	-0.1	-0.6	-0.1	0.45	0.45	0.00	
220.0	0.97	266.58	220.0	4,812.0	-0.2	-1.9	-0.2	0.43	0.43	6.83	
315.0	0.53	287.76	315.0	4,717.0	-0.1	-3.1	-0.1	0.54	-0.46	22.29	
411.0	0.22	238.72	411.0	4,621.0	-0.1	-3.7	-0.1	0.44	-0.32	-51.08	
506.0	2.55	161.90	505.9	4,526.1	-2.2	-3.2	-2.2	2.64	2.45	-80.86	
602.0	4.97	177.72	601.7	4,430.3	-8.4	-2.3	-8.4	2.72	2.52	16.48	
697.0	6.20	176.93	696.3	4,335.7	-17.6	-1.9	-17.6	1.30	1.29	-0.83	
792.0	7.56	166.12	790.6	4,241.4	-28.8	-0.1	-28.8	1.97	1.43	-11.38	
887.0	7.91	168.75	884.7	4,147.3	-41.3	2.6	-41.3	0.52	0.37	2.77	
982.0	9.49	164.27	978.6	4,053.4	-55.3	6.0	-55.3	1.81	1.66	-4.72	
1,077.0	9.84	165.50	1,072.3	3,959.7	-70.6	10.2	-70.6	0.43	0.37	1.29	
1,173.0	10.50	164.97	1,166.8	3,865.2	-87.0	14.5	-87.0	0.69	0.69	-0.55	

Survey Report



Company:	ANADARKO PETROLEUM CORP	Local Co-ordinate Reference:	Well CARSON 1-6HZ
Project:	WELD COUNTY (NAD 83)	TVD Reference:	KB 20' @ 5032.0usft (PD461)
Site:	SW SW SEC 1 T1N R68W 6th P.M. (	MD Reference:	KB 20' @ 5032.0usft (PD461)
Well:	CARSON 1-6HZ	North Reference:	True
Wellbore:	JOB #2019-401-461	Survey Calculation Method:	Minimum Curvature
Design:	FINAL SURVEYS	Database:	Database 1

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Subsea Depth (usft)	+N-S (usft)	+E-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
1,267.0	10.50	160.49	1,259.2	3,772.8	-103.4	19.6	-103.4	0.87	0.00	-4.77
1,362.0	12.08	159.88	1,352.4	3,679.6	-120.9	25.9	-120.9	1.67	1.66	-0.64
1,458.0	12.74	160.49	1,446.1	3,585.9	-140.3	32.9	-140.3	0.70	0.69	0.64
1,553.0	11.51	167.17	1,539.0	3,493.0	-159.4	38.5	-159.4	1.96	-1.29	7.03
1,648.0	10.41	163.30	1,632.3	3,399.7	-176.9	43.1	-176.9	1.39	-1.16	-4.07
1,743.0	11.12	164.45	1,725.6	3,306.4	-193.9	48.0	-193.9	0.78	0.75	1.21
1,797.0	10.33	165.24	1,778.7	3,253.3	-203.6	50.6	-203.6	1.49	-1.46	1.46
SURFACE CASING										
1,837.0	10.11	166.31	1,818.0	3,214.0	-210.5	52.4	-210.5	0.72	-0.54	2.68
1,939.0	9.58	169.26	1,918.5	3,113.5	-227.5	56.1	-227.5	0.72	-0.52	2.89
2,033.0	11.11	168.62	2,011.0	3,021.0	-244.1	59.3	-244.1	1.63	1.63	-0.68
2,127.0	10.39	169.54	2,103.3	2,928.7	-261.3	62.6	-261.3	0.79	-0.77	0.98
2,222.0	11.23	164.47	2,196.7	2,835.3	-278.7	66.7	-278.7	1.33	0.88	-5.34
2,316.0	10.49	163.33	2,289.0	2,743.0	-295.7	71.6	-295.7	0.82	-0.79	-1.21
2,411.0	11.30	158.30	2,382.3	2,649.7	-312.6	77.5	-312.6	1.31	0.85	-5.29
2,505.0	10.01	156.95	2,474.6	2,557.4	-328.7	84.1	-328.7	1.40	-1.37	-1.44
2,600.0	10.97	161.94	2,568.1	2,463.9	-344.9	90.1	-344.9	1.39	1.01	5.25
2,694.0	11.29	156.56	2,660.3	2,371.7	-361.8	96.6	-361.8	1.16	0.34	-5.72
2,786.0	10.10	157.14	2,750.7	2,281.3	-377.5	103.3	-377.5	1.30	-1.29	0.63
2,881.0	10.61	164.98	2,844.1	2,187.9	-393.6	108.8	-393.6	1.58	0.54	8.25
2,976.0	11.98	161.02	2,937.3	2,094.7	-411.4	114.3	-411.4	1.66	1.44	-4.17
3,069.0	10.31	163.06	3,028.5	2,003.5	-428.5	119.8	-428.5	1.84	-1.80	2.19
3,163.0	10.77	163.61	3,121.0	1,911.0	-445.0	124.8	-445.0	0.50	0.49	0.59
3,256.0	11.59	164.99	3,212.2	1,819.8	-462.3	129.6	-462.3	0.93	0.88	1.48
3,350.0	10.30	165.86	3,304.5	1,727.5	-479.6	134.1	-479.6	1.38	-1.37	0.93
3,444.0	10.80	159.90	3,396.9	1,635.1	-496.0	139.2	-496.0	1.28	0.53	-6.34
3,537.0	10.08	158.51	3,488.4	1,543.6	-511.8	145.2	-511.8	0.82	-0.77	-1.49
3,631.0	11.89	156.92	3,580.6	1,451.4	-528.3	152.0	-528.3	1.95	1.93	-1.69
3,725.0	9.89	155.08	3,672.9	1,359.1	-544.6	159.2	-544.6	2.16	-2.13	-1.96
3,820.0	11.38	155.19	3,766.3	1,265.7	-560.5	166.6	-560.5	1.57	1.57	0.12
3,914.0	9.78	153.00	3,858.7	1,173.3	-576.0	174.1	-576.0	1.75	-1.70	-2.33
4,008.0	10.87	154.01	3,951.2	1,080.8	-591.1	181.6	-591.1	1.18	1.16	1.07
4,102.0	12.70	163.28	4,043.2	988.8	-609.0	188.5	-609.0	2.80	1.95	9.86
4,195.0	11.42	164.17	4,134.1	897.9	-627.6	193.9	-627.6	1.39	-1.38	0.96
4,289.0	9.82	164.62	4,226.5	805.5	-644.3	198.6	-644.3	1.70	-1.70	0.48
4,382.0	8.73	163.97	4,318.3	713.7	-658.7	202.6	-658.7	1.18	-1.17	-0.70
4,474.0	9.76	163.06	4,409.1	622.9	-672.9	206.8	-672.9	1.13	1.12	-0.99
4,569.0	6.87	161.36	4,503.1	528.9	-686.0	211.0	-686.0	3.05	-3.04	-1.79
4,665.0	8.60	158.32	4,598.2	433.8	-698.1	215.5	-698.1	1.85	1.80	-3.17
4,757.0	9.26	159.34	4,689.1	342.9	-711.4	220.6	-711.4	0.74	0.72	1.11
4,851.0	12.53	160.84	4,781.4	250.6	-728.1	226.6	-728.1	3.49	3.48	1.60
4,945.0	10.94	161.89	4,873.4	158.6	-746.2	232.8	-746.2	1.71	-1.69	1.12
5,039.0	8.87	163.49	4,966.0	66.0	-761.7	237.6	-761.7	2.22	-2.20	1.70
5,132.0	8.98	161.46	5,057.9	-25.9	-775.4	241.9	-775.4	0.36	0.12	-2.18
5,227.0	8.53	166.41	5,151.8	-119.8	-789.3	246.0	-789.3	0.92	-0.47	5.21
5,320.0	10.72	164.56	5,243.5	-211.5	-804.3	249.9	-804.3	2.38	2.35	-1.99
5,414.0	12.08	159.95	5,335.6	-303.6	-822.0	255.6	-822.0	1.74	1.45	-4.90
5,509.0	9.84	160.65	5,428.9	-396.9	-839.0	261.7	-839.0	2.36	-2.36	0.74
5,602.0	10.71	154.70	5,520.4	-488.4	-854.3	268.0	-854.3	1.47	0.94	-6.40
5,697.0	8.85	155.78	5,614.0	-582.0	-869.0	274.8	-869.0	1.97	-1.96	1.14
5,790.0	6.80	155.44	5,706.2	-674.2	-880.5	280.0	-880.5	2.20	-2.20	-0.37
5,883.0	5.01	150.56	5,798.7	-766.7	-889.0	284.3	-889.0	2.00	-1.92	-5.25
6,003.0	4.04	152.14	5,918.3	-866.3	-897.3	288.8	-897.3	0.81	-0.81	1.32

Survey Report



Company:	ANADARKO PETROLEUM CORP	Local Co-ordinate Reference:	Well CARSON 1-6HZ
Project:	WELD COUNTY (NAD 83)	TVD Reference:	KB 20' @ 5032.0usft (PD461)
Site:	SW SW SEC 1 T1N R68W 6th P.M. (	MD Reference:	KB 20' @ 5032.0usft (PD461)
Well:	CARSON 1-6HZ	North Reference:	True
Wellbore:	JOB #2019-401-461	Survey Calculation Method:	Minimum Curvature
Design:	FINAL SURVEYS	Database:	Database 1

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Subsea Depth (usft)	+N-S (usft)	+E-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
6,096.0	4.42	188.67	6,011.0	-979.0	-903.8	289.8	-903.8	2.88	0.41	39.28
6,190.0	3.40	186.29	6,104.8	-1,072.8	-910.1	289.0	-910.1	1.10	-1.09	-2.53
6,285.0	2.63	190.53	6,199.7	-1,167.7	-915.1	288.3	-915.1	0.84	-0.81	4.46
6,378.0	2.76	174.61	6,292.6	-1,260.6	-919.4	288.1	-919.4	0.81	0.14	-17.12
6,473.0	2.52	175.31	6,387.5	-1,355.5	-923.8	288.5	-923.8	0.25	-0.25	0.74
6,566.0	2.23	172.36	6,480.4	-1,448.4	-927.6	288.9	-927.6	0.34	-0.31	-3.17
6,661.0	1.95	156.40	6,575.3	-1,543.3	-930.9	289.8	-930.9	0.68	-0.29	-16.80
6,753.0	0.24	234.36	6,667.3	-1,635.3	-932.5	290.2	-932.5	2.08	-1.86	84.74
6,847.0	0.12	198.41	6,761.3	-1,729.3	-932.7	290.1	-932.7	0.17	-0.13	-38.24
KOP (6934ft md)										
6,934.0	0.39	341.12	6,848.3	-1,816.3	-932.5	289.9	-932.5	0.57	0.31	164.04
6,941.0	0.43	341.90	6,855.3	-1,823.3	-932.4	289.9	-932.4	0.57	0.56	11.14
7,033.0	9.04	7.30	6,946.9	-1,914.9	-924.9	290.7	-924.9	9.41	9.36	27.61
7,125.0	16.02	356.24	7,036.7	-2,004.7	-905.0	290.8	-905.0	7.99	7.59	-12.02
7,218.0	23.04	356.46	7,124.3	-2,092.3	-874.0	288.8	-874.0	7.55	7.55	0.24
7,310.0	28.59	0.52	7,207.1	-2,175.1	-834.0	287.9	-834.0	6.33	6.03	4.41
7,403.0	33.37	359.61	7,286.8	-2,254.8	-786.2	288.0	-786.2	5.16	5.14	-0.98
7,495.0	40.33	2.58	7,360.4	-2,328.4	-731.1	289.1	-731.1	7.81	7.57	3.23
7,588.0	46.12	4.28	7,428.1	-2,396.1	-667.5	293.0	-667.5	6.35	6.23	1.83
7,683.0	54.40	356.76	7,488.8	-2,456.8	-594.6	293.4	-594.6	10.62	8.72	-7.92
7,776.0	65.75	355.92	7,535.2	-2,503.2	-514.3	288.2	-514.3	12.23	12.20	-0.90
ENTER TARGET BOX (7796.5ft md)										
7,796.5	67.40	357.22	7,543.3	-2,511.3	-495.5	287.1	-495.5	9.94	8.05	6.36
7,869.0	73.31	1.61	7,567.7	-2,535.7	-427.3	286.4	-427.3	9.94	8.15	6.05
7,962.0	78.58	0.92	7,590.3	-2,558.3	-337.2	288.4	-337.2	5.71	5.67	-0.74
8,056.0	82.82	358.31	7,605.5	-2,573.5	-244.4	287.8	-244.4	5.28	4.51	-2.78
8,150.0	83.89	0.16	7,616.3	-2,584.3	-151.1	286.5	-151.1	2.26	1.14	1.97
LP: 40.0756° N & -104.958423° E										
8,234.0	89.37	359.48	7,621.3	-2,589.3	-67.2	286.3	-67.2	6.58	6.53	-0.81
8,243.0	89.96	359.41	7,621.3	-2,589.3	-58.2	286.2	-58.2	6.58	6.53	-0.80
8,336.0	90.71	358.34	7,620.8	-2,588.8	34.7	284.3	34.7	1.41	0.81	-1.15
8,429.0	91.19	359.64	7,619.2	-2,587.2	127.7	282.7	127.7	1.49	0.52	1.40
8,523.0	91.71	0.67	7,616.9	-2,584.9	221.7	283.0	221.7	1.23	0.55	1.10
8,616.0	91.86	1.01	7,614.0	-2,582.0	314.6	284.3	314.6	0.40	0.16	0.37
8,711.0	89.63	1.65	7,612.7	-2,580.7	409.6	286.5	409.6	2.44	-2.35	0.67
8,805.0	90.89	0.80	7,612.3	-2,580.3	503.6	288.5	503.6	1.62	1.34	-0.90
8,901.0	90.11	0.04	7,611.5	-2,579.5	599.5	289.2	599.5	1.13	-0.81	-0.79
8,994.0	89.25	358.47	7,612.0	-2,580.0	692.5	288.0	692.5	1.92	-0.92	-1.69
9,088.0	89.43	357.56	7,613.1	-2,581.1	786.5	284.8	786.5	0.99	0.19	-0.97
~ CROSS 460ft SETBACK										
9,129.4	89.67	356.93	7,613.4	-2,581.4	827.8	282.8	827.8	1.63	0.59	-1.52
9,180.0	89.97	356.16	7,613.5	-2,581.5	878.3	279.7	878.3	1.63	0.59	-1.52
9,275.0	91.32	358.27	7,612.5	-2,580.5	973.2	275.1	973.2	2.64	1.42	2.22
9,369.0	90.22	359.86	7,611.2	-2,579.2	1,067.2	273.6	1,067.2	2.06	-1.17	1.69
9,463.0	90.74	1.09	7,610.4	-2,578.4	1,161.2	274.4	1,161.2	1.42	0.55	1.31
9,558.0	90.89	2.13	7,609.1	-2,577.1	1,256.1	277.0	1,256.1	1.11	0.16	1.09
9,653.0	89.81	1.96	7,608.5	-2,576.5	1,351.1	280.4	1,351.1	1.15	-1.14	-0.18
9,748.0	87.64	0.90	7,610.6	-2,578.6	1,446.0	282.8	1,446.0	2.54	-2.28	-1.12
9,842.0	88.87	1.49	7,613.5	-2,581.5	1,539.9	284.8	1,539.9	1.45	1.31	0.63
9,936.0	90.73	2.08	7,613.8	-2,581.8	1,633.9	287.7	1,633.9	2.08	1.98	0.63
10,030.0	89.18	2.65	7,613.9	-2,581.9	1,727.8	291.6	1,727.8	1.76	-1.65	0.61
10,125.0	90.14	2.74	7,614.4	-2,582.4	1,822.7	296.0	1,822.7	1.01	1.01	0.09
10,218.0	89.41	2.11	7,614.8	-2,582.8	1,915.6	300.0	1,915.6	1.04	-0.78	-0.68

Survey Report



Company:	ANADARKO PETROLEUM CORP	Local Co-ordinate Reference:	Well CARSON 1-6HZ
Project:	WELD COUNTY (NAD 83)	TVD Reference:	KB 20' @ 5032.0usft (PD461)
Site:	SW SW SEC 1 T1N R68W 6th P.M. (	MD Reference:	KB 20' @ 5032.0usft (PD461)
Well:	CARSON 1-6HZ	North Reference:	True
Wellbore:	JOB #2019-401-461	Survey Calculation Method:	Minimum Curvature
Design:	FINAL SURVEYS	Database:	Database 1

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Subsea Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
10,312.0	89.36	1.22	7,615.8	-2,583.8	2,009.6	302.7	2,009.6	0.95	-0.05	-0.95
10,405.0	90.98	1.63	7,615.5	-2,583.5	2,102.5	305.0	2,102.5	1.80	1.74	0.44
10,499.0	88.90	0.89	7,615.6	-2,583.6	2,196.5	307.1	2,196.5	2.35	-2.21	-0.79
10,591.0	89.07	0.68	7,617.3	-2,585.3	2,288.5	308.3	2,288.5	0.29	0.18	-0.23
10,685.0	89.44	0.42	7,618.5	-2,586.5	2,382.5	309.2	2,382.5	0.48	0.39	-0.28
10,780.0	90.33	359.35	7,618.7	-2,586.7	2,477.5	309.0	2,477.5	1.47	0.94	-1.13
10,875.0	90.88	0.02	7,617.7	-2,585.7	2,572.4	308.5	2,572.4	0.91	0.58	0.71
10,970.0	90.24	358.51	7,616.7	-2,584.7	2,667.4	307.3	2,667.4	1.73	-0.67	-1.59
11,065.0	90.65	358.06	7,616.0	-2,584.0	2,762.4	304.5	2,762.4	0.64	0.43	-0.47
11,158.0	90.63	356.82	7,615.0	-2,583.0	2,855.3	300.3	2,855.3	1.33	-0.02	-1.33
11,251.0	90.49	357.89	7,614.1	-2,582.1	2,948.2	296.0	2,948.2	1.16	-0.15	1.15
11,345.0	90.37	356.24	7,613.3	-2,581.3	3,042.1	291.2	3,042.1	1.76	-0.13	-1.76
11,438.0	91.43	358.49	7,611.9	-2,579.9	3,134.9	286.9	3,134.9	2.67	1.14	2.42
11,532.0	92.26	358.23	7,608.9	-2,576.9	3,228.8	284.2	3,228.8	0.93	0.88	-0.28
11,626.0	92.69	0.17	7,604.8	-2,572.8	3,322.7	282.9	3,322.7	2.11	0.46	2.06
11,718.0	90.47	1.55	7,602.3	-2,570.3	3,414.7	284.3	3,414.7	2.84	-2.41	1.50
11,811.0	90.03	1.50	7,601.9	-2,569.9	3,507.7	286.8	3,507.7	0.48	-0.47	-0.05
11,904.0	90.59	0.73	7,601.4	-2,569.4	3,600.6	288.6	3,600.6	1.02	0.60	-0.83
11,998.0	91.37	1.10	7,599.7	-2,567.7	3,694.6	290.1	3,694.6	0.92	0.83	0.39
12,090.0	90.80	0.17	7,598.0	-2,566.0	3,786.6	291.1	3,786.6	1.19	-0.62	-1.01
12,183.0	91.74	359.52	7,595.9	-2,563.9	3,879.6	290.9	3,879.6	1.23	1.01	-0.70
12,276.0	92.81	358.95	7,592.3	-2,560.3	3,972.5	289.6	3,972.5	1.30	1.15	-0.61
12,371.0	90.99	1.06	7,589.1	-2,557.1	4,067.4	289.6	4,067.4	2.93	-1.92	2.22
12,465.0	92.07	3.05	7,586.6	-2,554.6	4,161.3	293.0	4,161.3	2.41	1.15	2.12
12,560.0	90.28	2.87	7,584.6	-2,552.6	4,256.2	297.9	4,256.2	1.89	-1.88	-0.19
12,653.0	91.01	2.41	7,583.6	-2,551.6	4,349.1	302.2	4,349.1	0.93	0.78	-0.49
12,746.0	89.52	2.37	7,583.2	-2,551.2	4,442.0	306.1	4,442.0	1.60	-1.60	-0.04
12,840.0	90.27	1.94	7,583.3	-2,551.3	4,535.9	309.6	4,535.9	0.92	0.80	-0.46
12,933.0	88.93	359.84	7,584.0	-2,552.0	4,628.9	311.0	4,628.9	2.68	-1.44	-2.26
13,025.0	89.66	359.53	7,585.1	-2,553.1	4,720.9	310.5	4,720.9	0.86	0.79	-0.34
13,117.0	91.40	1.78	7,584.3	-2,552.3	4,812.9	311.6	4,812.9	3.09	1.89	2.45
13,211.0	87.73	357.84	7,585.0	-2,553.0	4,906.8	311.3	4,906.8	5.73	-3.90	-4.19
13,304.0	89.97	358.76	7,586.9	-2,554.9	4,999.8	308.5	4,999.8	2.60	2.41	0.99
13,397.0	91.43	358.29	7,585.7	-2,553.7	5,092.7	306.1	5,092.7	1.65	1.57	-0.51
13,491.0	92.41	358.44	7,582.6	-2,550.6	5,186.6	303.5	5,186.6	1.05	1.04	0.16
13,584.0	89.68	358.33	7,580.9	-2,548.9	5,279.6	300.8	5,279.6	2.94	-2.94	-0.12
13,676.0	90.48	358.50	7,580.7	-2,548.7	5,371.5	298.3	5,371.5	0.89	0.87	0.18
13,770.0	91.90	358.24	7,578.8	-2,546.8	5,465.5	295.6	5,465.5	1.54	1.51	-0.28
13,864.0	89.95	358.64	7,577.3	-2,545.3	5,559.4	293.1	5,559.4	2.12	-2.07	0.43
13,958.0	91.98	358.67	7,575.7	-2,543.7	5,653.4	290.8	5,653.4	2.16	2.16	0.03
14,053.0	90.54	0.71	7,573.6	-2,541.6	5,748.3	290.3	5,748.3	2.63	-1.52	2.15
14,146.0	90.04	0.99	7,573.1	-2,541.1	5,841.3	291.7	5,841.3	0.62	-0.54	0.30
14,239.0	88.27	1.64	7,574.5	-2,542.5	5,934.3	293.8	5,934.3	2.03	-1.90	0.70
14,332.0	89.58	1.36	7,576.2	-2,544.2	6,027.2	296.3	6,027.2	1.44	1.41	-0.30
14,427.0	89.18	1.39	7,577.3	-2,545.3	6,122.2	298.6	6,122.2	0.42	-0.42	0.03
14,521.0	90.45	1.21	7,577.6	-2,545.6	6,216.2	300.7	6,216.2	1.36	1.35	-0.19
14,614.0	91.04	1.82	7,576.4	-2,544.4	6,309.1	303.2	6,309.1	0.91	0.63	0.66
14,708.0	89.34	359.66	7,576.1	-2,544.1	6,403.1	304.4	6,403.1	2.92	-1.81	-2.30
14,801.0	91.62	359.75	7,575.3	-2,543.3	6,496.1	303.9	6,496.1	2.45	2.45	0.10
14,893.0	89.54	0.81	7,574.3	-2,542.3	6,588.1	304.3	6,588.1	2.54	-2.26	1.15
14,987.0	90.88	0.54	7,574.0	-2,542.0	6,682.1	305.4	6,682.1	1.45	1.43	-0.29
15,081.0	90.66	359.86	7,572.7	-2,540.7	6,776.1	305.8	6,776.1	0.76	-0.23	-0.72
15,175.0	89.73	0.41	7,572.4	-2,540.4	6,870.1	306.0	6,870.1	1.15	-0.99	0.59

Survey Report



Company:	ANADARKO PETROLEUM CORP	Local Co-ordinate Reference:	Well CARSON 1-6HZ
Project:	WELD COUNTY (NAD 83)	TVD Reference:	KB 20' @ 5032.0usft (PD461)
Site:	SW SW SEC 1 T1N R68W 6th P.M. (	MD Reference:	KB 20' @ 5032.0usft (PD461)
Well:	CARSON 1-6HZ	North Reference:	True
Wellbore:	JOB #2019-401-461	Survey Calculation Method:	Minimum Curvature
Design:	FINAL SURVEYS	Database:	Database 1

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Subsea Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
15,269.0	91.48	0.67	7,571.4	-2,539.4	6,964.1	306.9	6,964.1	1.88	1.86	0.28
15,363.0	89.66	359.65	7,570.5	-2,538.5	7,058.1	307.1	7,058.1	2.22	-1.94	-1.09
15,455.0	90.75	359.92	7,570.2	-2,538.2	7,150.0	306.8	7,150.0	1.22	1.18	0.29
15,549.0	88.55	359.16	7,570.7	-2,538.7	7,244.0	306.0	7,244.0	2.48	-2.34	-0.81
15,643.0	90.17	358.77	7,571.8	-2,539.8	7,338.0	304.3	7,338.0	1.77	1.72	-0.41
15,737.0	91.66	358.63	7,570.3	-2,538.3	7,432.0	302.2	7,432.0	1.59	1.59	-0.15
15,830.0	90.02	359.06	7,568.9	-2,536.9	7,524.9	300.3	7,524.9	1.82	-1.76	0.46
15,924.0	90.76	358.95	7,568.3	-2,536.3	7,618.9	298.7	7,618.9	0.80	0.79	-0.12
16,016.0	89.13	358.73	7,568.4	-2,536.4	7,710.9	296.8	7,710.9	1.79	-1.77	-0.24
16,110.0	89.83	358.65	7,569.2	-2,537.2	7,804.9	294.7	7,804.9	0.75	0.74	-0.09
16,204.0	90.89	358.69	7,568.6	-2,536.6	7,898.8	292.5	7,898.8	1.13	1.13	0.04
16,298.0	91.41	358.47	7,566.7	-2,534.7	7,992.8	290.2	7,992.8	0.60	0.55	-0.23
16,393.0	90.25	359.28	7,565.4	-2,533.4	8,087.8	288.3	8,087.8	1.49	-1.22	0.85
16,485.0	91.03	358.74	7,564.3	-2,532.3	8,179.7	286.7	8,179.7	1.03	0.85	-0.59
16,580.0	89.73	0.09	7,563.7	-2,531.7	8,274.7	285.8	8,274.7	1.97	-1.37	1.42
16,675.0	90.91	359.84	7,563.2	-2,531.2	8,369.7	285.7	8,369.7	1.27	1.24	-0.26
16,768.0	90.02	0.49	7,562.4	-2,530.4	8,462.7	286.0	8,462.7	1.19	-0.96	0.70
16,863.0	90.43	1.04	7,562.1	-2,530.1	8,557.7	287.2	8,557.7	0.72	0.43	0.58
16,956.0	90.08	1.07	7,561.6	-2,529.6	8,650.7	289.0	8,650.7	0.38	-0.38	0.03
17,049.0	88.61	1.00	7,562.7	-2,530.7	8,743.7	290.6	8,743.7	1.58	-1.58	-0.08
17,143.0	89.20	0.59	7,564.5	-2,532.5	8,837.6	291.9	8,837.6	0.76	0.63	-0.44
17,237.0	90.00	0.35	7,565.2	-2,533.2	8,931.6	292.7	8,931.6	0.89	0.85	-0.26
17,329.0	90.96	359.25	7,564.4	-2,532.4	9,023.6	292.4	9,023.6	1.59	1.04	-1.20
17,422.0	90.88	359.17	7,562.9	-2,530.9	9,116.6	291.1	9,116.6	0.12	-0.09	-0.09
-CROSS 460ft SETBACK										
17,497.2	91.44	359.28	7,561.4	-2,529.4	9,191.8	290.1	9,191.8	0.76	0.74	0.15
17,516.0	91.58	359.31	7,560.9	-2,528.9	9,210.6	289.9	9,210.6	0.76	0.74	0.15
17,609.0	89.67	358.66	7,559.9	-2,527.9	9,303.6	288.2	9,303.6	2.17	-2.05	-0.70
17,704.0	89.89	358.05	7,560.2	-2,528.2	9,398.5	285.5	9,398.5	0.68	0.23	-0.64
17,798.0	90.54	357.39	7,559.9	-2,527.9	9,492.4	281.7	9,492.4	0.99	0.69	-0.70
LAST SURVEY - JUNE 30, 2019										
17,851.0	90.88	357.05	7,559.2	-2,527.2	9,545.4	279.2	9,545.4	0.91	0.64	-0.64
EXTRAP TO TD: 40.102136° N & -104.958458° E										
17,906.0	90.88	357.05	7,558.4	-2,526.4	9,600.3	276.3	9,600.3	0.00	0.00	0.00

Survey Report



Company:	ANADARKO PETROLEUM CORP	Local Co-ordinate Reference:	Well CARSON 1-6HZ
Project:	WELD COUNTY (NAD 83)	TVD Reference:	KB 20' @ 5032.0usft (PD461)
Site:	SW SW SEC 1 T1N R68W 6th P.M. (	MD Reference:	KB 20' @ 5032.0usft (PD461)
Well:	CARSON 1-6HZ	North Reference:	True
Wellbore:	JOB #2019-401-461	Survey Calculation Method:	Minimum Curvature
Design:	FINAL SURVEYS	Database:	Database 1

Targets										
Target Name	- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
	- Shape	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
BHL - CARSON 1-6H; - survey misses target center by 17.8usft at 17902.7usft MD (7558.4 TVD, 9597.0 N, 276.5 E) - Point		0.00	0.00	7,551.0	9,597.7	292.7	14,563,925.92	1,652,049.50	40° 6' 7.665 N	104° 57' 30.239 W
KOP - CARSON 1-6H - survey misses target center by 50.8usft at 7002.5usft MD (6916.7 TVD, -928.9 N, 290.2 E) - Point		0.00	0.00	6,920.8	-979.4	292.9	14,553,353.00	1,652,054.50	40° 4' 23.140 N	104° 57' 30.238 W
HEEL - CARSON 1-6I - survey misses target center by 33.3usft at 8048.7usft MD (7604.5 TVD, -251.7 N, 288.0 E) - Point		0.00	0.00	7,637.0	-257.0	292.9	14,554,075.16	1,652,054.17	40° 4' 30.279 N	104° 57' 30.238 W

Survey Annotations					
Measured Depth	Vertical Depth	Local Coordinates		Comment	
(usft)	(usft)	+N/-S	+E/-W		
		(usft)	(usft)		
1,837.0	1,818.0	-210.5	52.4	SURFACE CASING	
6,934.0	6,848.3	-932.5	289.9	KOP (6934ft md)	
7,796.5	7,543.3	-495.5	287.1	ENTER TARGET BOX (7796.5ft md)	
8,234.0	7,621.3	-67.2	286.3	LP: 40.0756° N & -104.958423° E	
9,129.4	7,613.4	827.8	282.8	~ CROSS 460ft SETBACK	
17,497.2	7,561.4	9,191.8	290.1	~CROSS 460ft SETBACK	
17,851.0	7,559.2	9,545.4	279.2	LAST SURVEY - JUNE 30, 2019	
17,906.0	7,558.4	9,600.3	276.3	EXTRAP TO TD: 40.102136° N & -104.958458° E	

Checked By: _____ Approved By: _____ Date: _____