

PDC ENERGY

WELD COUNTY, COLORADO

NE SW SEC. 7 T4N R64W 6th P.M.

HONEBEIN 7K-223

JOB # 2015-69-123

28 July, 2015

Survey: FINAL SURVEYS





Project: WELD COUNTY, COLORADO
Site: NE SW SEC. 7 T4N R64W 6th P.M.
Well: HONEBEIN 7K-223
Wellbore: JOB # 2015-69-123
Design: FINAL SURVEYS

ANNOTATIONS

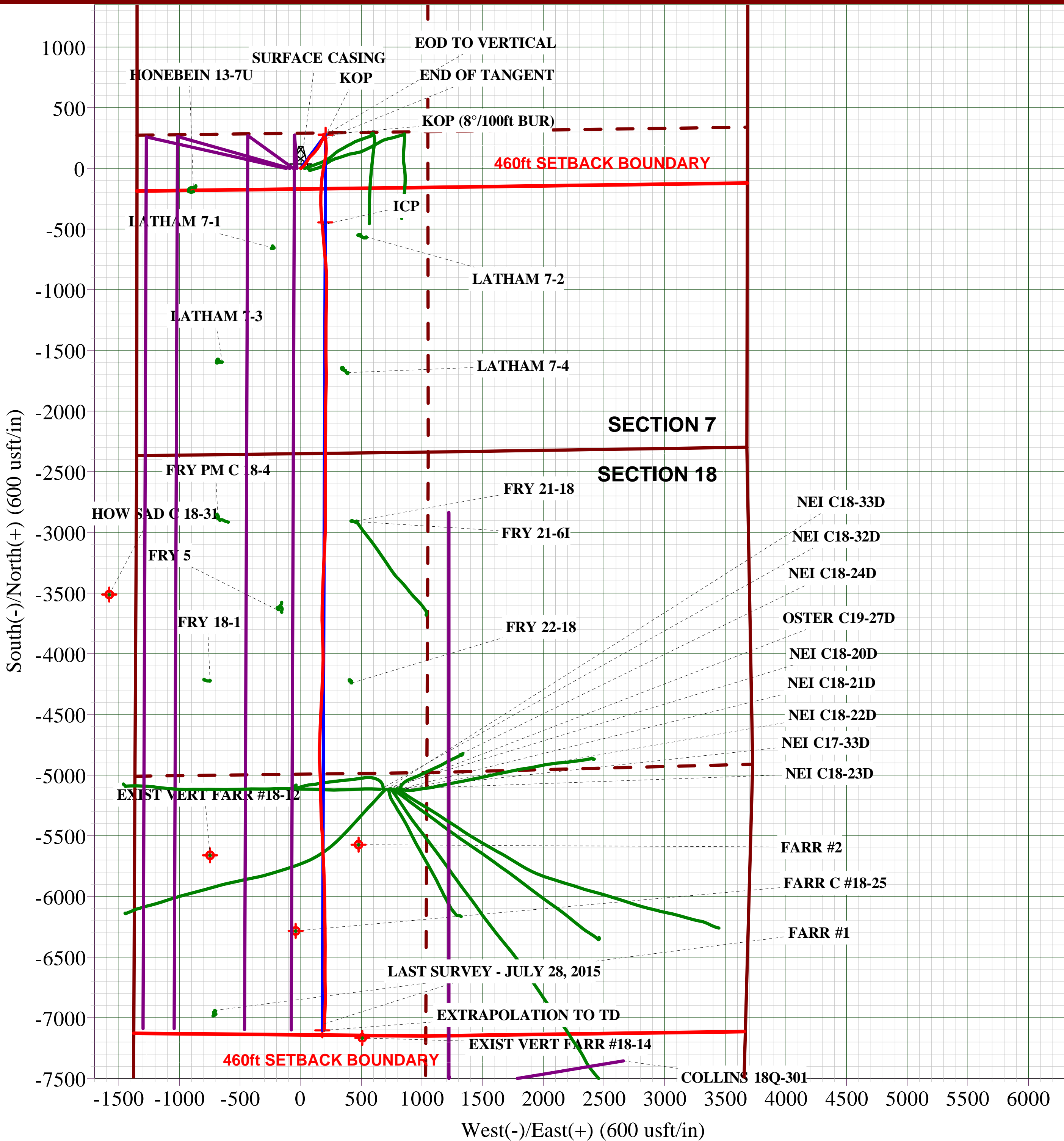
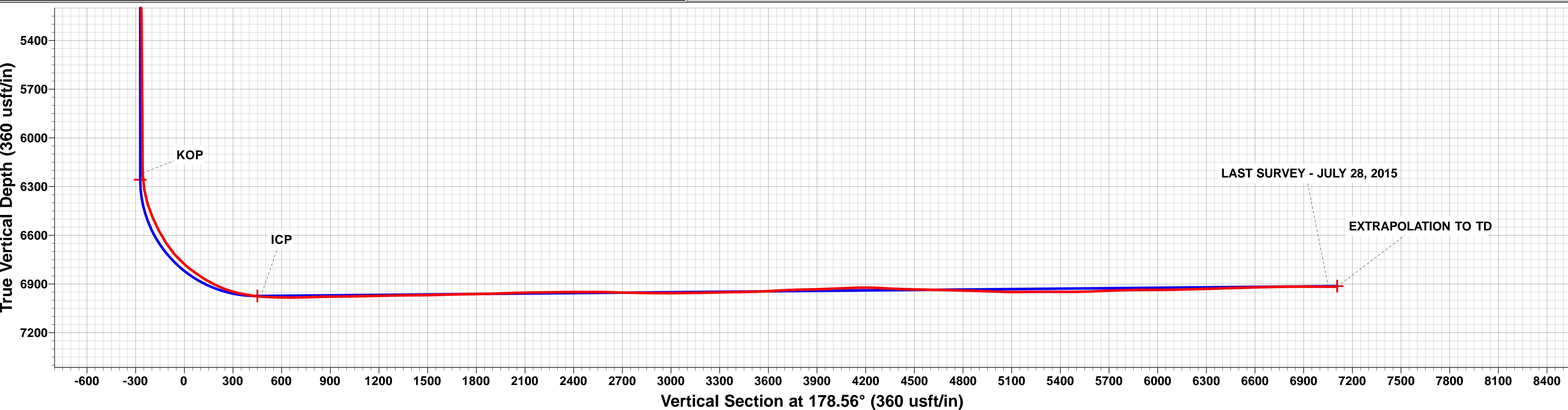
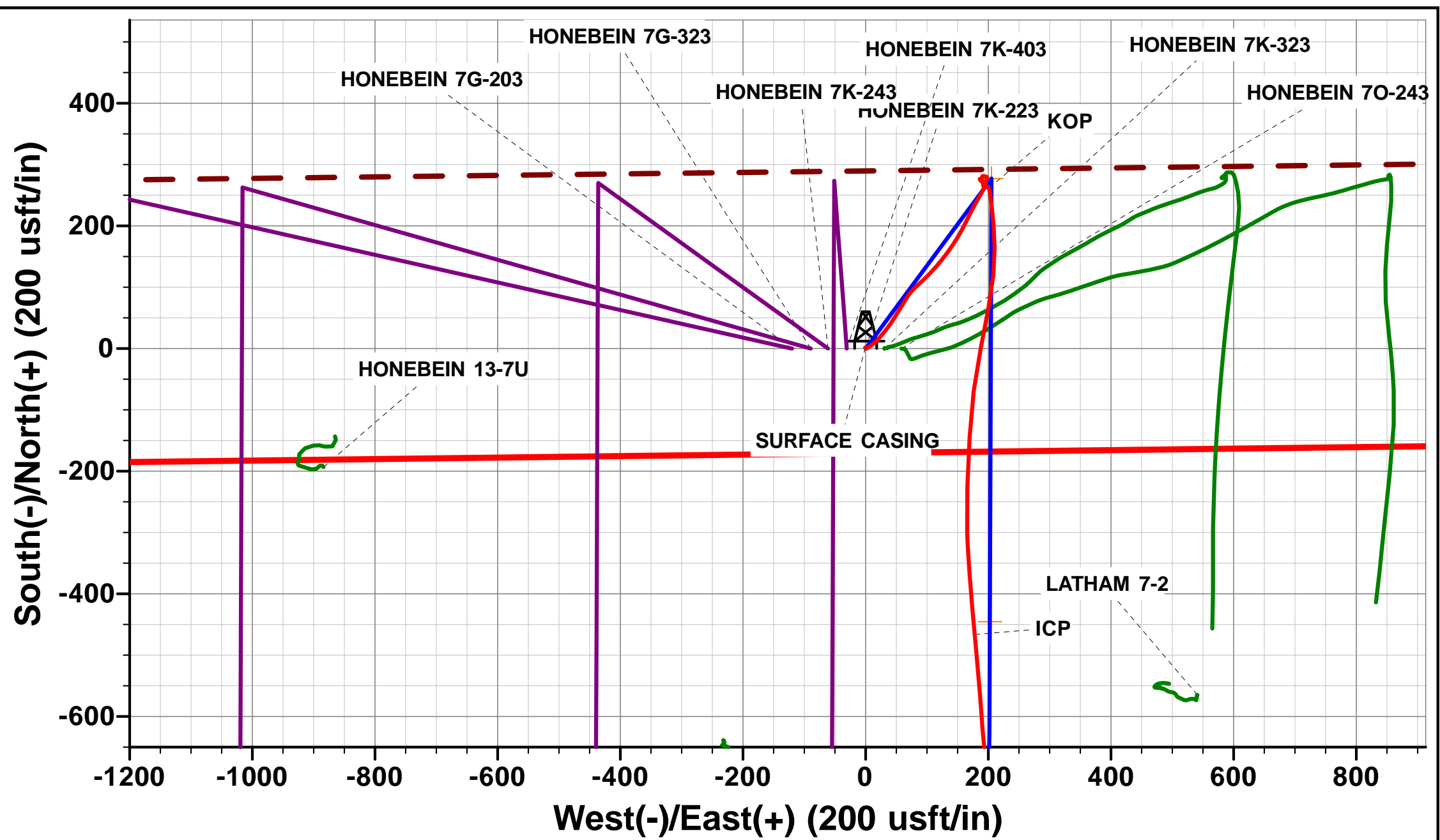
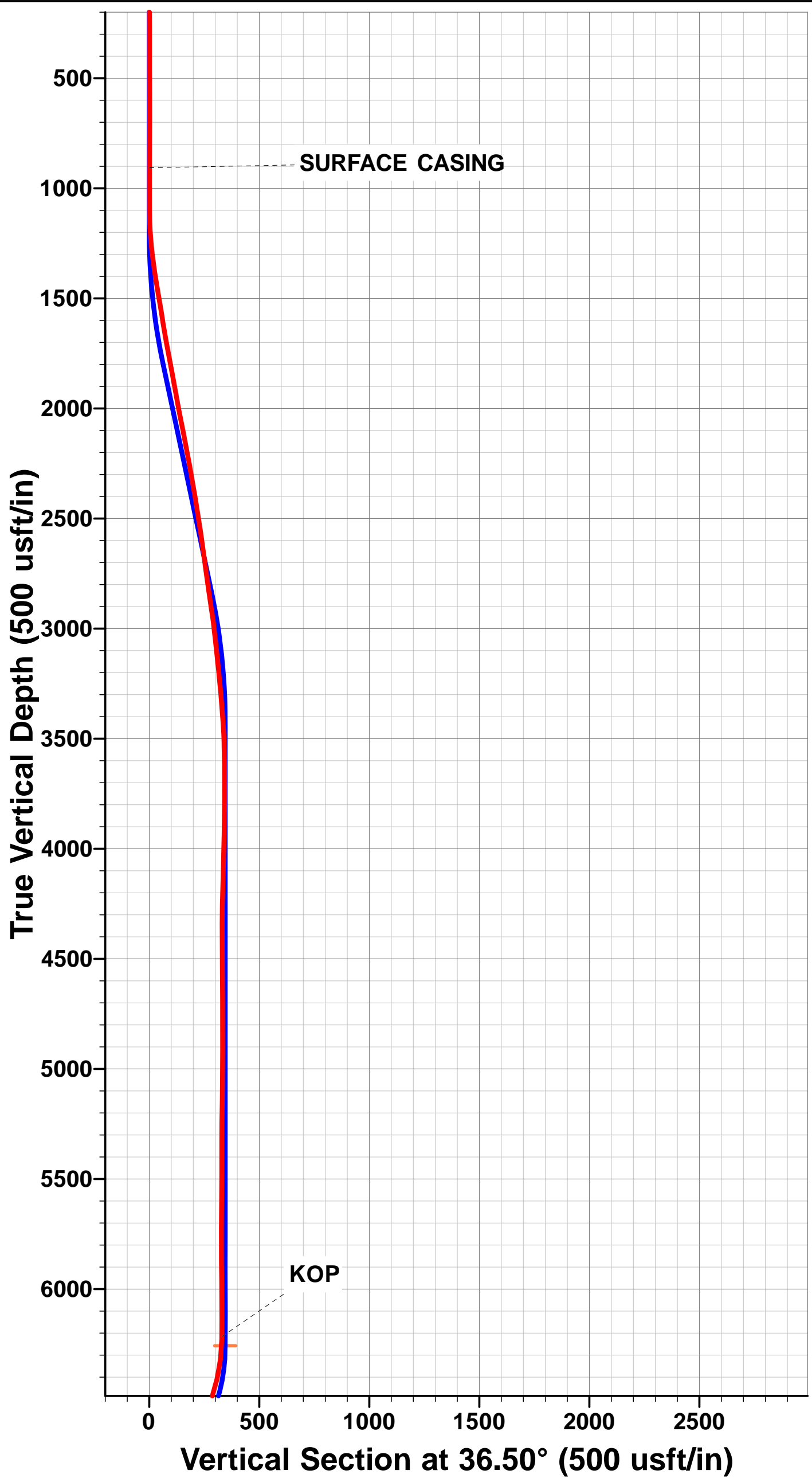
TVD	MD	Inc	Azi	+N/-S	+E/-W	VSec	Dep	Annotation
907.0	907.0	0.39	131.09	1.5	-0.3	-1.5	4.9	SURFACE CASING
6216.0	6243.0	2.02	151.74	261.6	201.0	-256.5	402.1	KOP
6977.7	7401.0	85.08	174.70	-466.1	178.1	470.4	1134.3	ICP
6916.8	13990.0	90.30	181.70	-7048.8	195.6	7051.5	7721.1	LAST SURVEY - JULY 28, 2015
6916.5	14045.0	90.30	181.70	-7103.8	193.9	7106.4	7776.1	EXTRAPOLATION TO TD

AS DRILLED LOCAL COORDINATES:

SHL: 2352ft FSL & 1350t FWL Sec 7
7" ICP: 1885.9ft FSL & 1528.1ft FWL Sec 7
BHL: 500.2ft FSL & 1569.1ft FWL of Sec 18

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
7" ICP *NEW* - HONEBEIN 7K-223 (P2)	6973.8	-445.3	202.7	40.324708	-104.596473
BHL - HONEBEIN 7K-223 (P2)	6913.0	-7104.0	178.5	40.306430	-104.596560
KOP - HONEBEIN 7K-223 (P2)	6257.6	277.4	205.3	40.326691	-104.596464



Survey Report



Company:	PDC ENERGY	Local Co-ordinate Reference:	Well HONEBEIN 7K-223
Project:	WELD COUNTY, COLORADO	TVD Reference:	KB @ 4864.5usft (ENS 123)
Site:	NE SW SEC. 7 T4N R64W 6th P.M.	MD Reference:	KB @ 4864.5usft (ENS 123)
Well:	HONEBEIN 7K-223	North Reference:	True
Wellbore:	JOB # 2015-69-123	Survey Calculation Method:	Minimum Curvature
Design:	FINAL SURVEYS	Database:	EDM 5000.1 Single User Db

Project	WELD COUNTY, COLORADO		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site	NE SW SEC. 7 T4N R64W 6th P.M.				
Site Position:		Northing:	1,362,859.07 usft	Latitude:	40.325930
From:	Lat/Long	Easting:	3,251,768.07 usft	Longitude:	-104.596990
Position Uncertainty:	0.0 usft	Slot Radius:	1.10000 ft	Grid Convergence:	0.58 °

Well	HONEBEIN 7K-223					
Well Position	+N/-S	0.0 usft	Northing:	1,362,858.46 usft	Latitude:	40.325930
	+E/-W	0.0 usft	Easting:	3,251,709.52 usft	Longitude:	-104.597200
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	4,851.0 usft

Wellbore	JOB # 2015-69-123				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	30/06/2015	8.32	66.87	52,595

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	178.56

Survey Program	Date	28/07/2015			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
166.0	14,045.0	FINAL SURVEYS (JOB # 2015-69-123)	MWD	MWD - Standard	

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	-4,864.5	0.0	0.0	0.0	0.00	0.00	0.00
166.0	0.40	37.90	166.0	-4,698.5	0.5	0.4	-0.4	0.24	0.24	0.00
263.0	0.40	351.20	263.0	-4,601.5	1.1	0.5	-1.0	0.33	0.00	-48.14
357.0	0.40	305.40	357.0	-4,507.5	1.6	0.2	-1.6	0.33	0.00	-48.72
450.0	0.20	337.50	450.0	-4,414.5	1.9	-0.1	-1.9	0.27	-0.22	34.52
543.0	0.40	49.70	543.0	-4,321.5	2.3	0.1	-2.3	0.42	0.22	77.63
637.0	0.20	223.70	637.0	-4,227.5	2.4	0.2	-2.4	0.64	-0.21	185.11
730.0	0.30	248.50	730.0	-4,134.5	2.2	-0.1	-2.2	0.16	0.11	26.67
824.0	0.30	206.30	824.0	-4,040.5	1.8	-0.5	-1.9	0.23	0.00	-44.89
864.0	0.30	151.20	864.0	-4,000.5	1.7	-0.5	-1.7	0.69	0.00	-137.75
SURFACE CASING										
907.0	0.39	131.09	907.0	-3,957.5	1.5	-0.3	-1.5	0.35	0.21	-46.76
1,013.0	0.70	109.80	1,013.0	-3,851.5	1.0	0.6	-1.0	0.35	0.29	-20.09

Survey Report



Company:	PDC ENERGY	Local Co-ordinate Reference:	Well HONEBEIN 7K-223
Project:	WELD COUNTY, COLORADO	TVD Reference:	KB @ 4864.5usft (ENS 123)
Site:	NE SW SEC. 7 T4N R64W 6th P.M.	MD Reference:	KB @ 4864.5usft (ENS 123)
Well:	HONEBEIN 7K-223	North Reference:	True
Wellbore:	JOB # 2015-69-123	Survey Calculation Method:	Minimum Curvature
Design:	FINAL SURVEYS	Database:	EDM 5000.1 Single User Db

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)
1,106.0	0.70	119.70	1,106.0	-3,758.5	0.5	1.6	-0.5	0.13	0.00	10.65
1,199.0	3.90	55.10	1,198.9	-3,665.6	2.1	4.7	-1.9	3.93	3.44	-69.46
1,292.0	6.90	53.20	1,291.5	-3,573.0	7.2	11.7	-6.9	3.23	3.23	-2.04
1,385.0	9.10	42.00	1,383.6	-3,480.9	16.0	21.1	-15.5	2.89	2.37	-12.04
1,478.0	9.40	38.30	1,475.4	-3,389.1	27.5	30.8	-26.7	0.72	0.32	-3.98
1,572.0	9.40	36.20	1,568.1	-3,296.4	39.7	40.1	-38.7	0.36	0.00	-2.23
1,665.0	9.20	31.70	1,659.9	-3,204.6	52.1	48.5	-50.9	0.81	-0.22	-4.84
1,758.0	11.20	30.60	1,751.4	-3,113.1	66.2	57.0	-64.8	2.16	2.15	-1.18
1,851.0	10.60	31.30	1,842.7	-3,021.8	81.3	66.0	-79.6	0.66	-0.65	0.75
1,944.0	10.10	43.10	1,934.2	-2,930.3	94.6	76.0	-92.6	2.34	-0.54	12.69
2,034.0	11.40	48.40	2,022.6	-2,841.9	106.3	88.1	-104.0	1.81	1.44	5.89
2,124.0	11.20	44.30	2,110.9	-2,753.6	118.4	100.8	-115.8	0.92	-0.22	-4.56
2,214.0	10.70	41.40	2,199.3	-2,665.2	130.9	112.4	-128.1	0.83	-0.56	-3.22
2,304.0	10.20	39.30	2,287.8	-2,576.7	143.4	123.0	-140.2	0.70	-0.56	-2.33
2,394.0	9.70	36.80	2,376.4	-2,488.1	155.6	132.6	-152.2	0.73	-0.56	-2.78
2,484.0	8.90	34.60	2,465.2	-2,399.3	167.4	141.1	-163.8	0.97	-0.89	-2.44
2,574.0	8.30	31.30	2,554.2	-2,310.3	178.7	148.4	-174.9	0.86	-0.67	-3.67
2,663.0	8.10	28.80	2,642.3	-2,222.2	189.7	154.8	-185.7	0.46	-0.22	-2.81
2,753.0	7.80	27.70	2,731.4	-2,133.1	200.6	160.7	-196.5	0.37	-0.33	-1.22
2,843.0	8.10	26.20	2,820.6	-2,043.9	211.7	166.3	-207.5	0.41	0.33	-1.67
2,933.0	8.80	26.40	2,909.6	-1,954.9	223.6	172.2	-219.2	0.78	0.78	0.22
3,023.0	6.80	30.90	2,998.8	-1,865.7	234.3	178.0	-229.8	2.32	-2.22	5.00
3,112.0	6.20	29.80	3,087.2	-1,777.3	243.0	183.1	-238.3	0.69	-0.67	-1.24
3,202.0	6.00	27.80	3,176.7	-1,687.8	251.4	187.7	-246.6	0.32	-0.22	-2.22
3,292.0	5.40	25.70	3,266.2	-1,598.3	259.4	191.7	-254.5	0.71	-0.67	-2.33
3,382.0	4.60	19.20	3,355.9	-1,508.6	266.6	194.7	-261.6	1.09	-0.89	-7.22
3,472.0	4.00	14.20	3,445.6	-1,418.9	273.1	196.7	-268.0	0.79	-0.67	-5.56
3,562.0	1.40	9.50	3,535.5	-1,329.0	277.2	197.6	-272.1	2.90	-2.89	-5.22
3,652.0	1.00	16.70	3,625.5	-1,239.0	279.0	198.1	-274.0	0.47	-0.44	8.00
3,742.0	1.50	290.00	3,715.5	-1,149.0	280.2	197.2	-275.1	1.95	0.56	-96.33
3,832.0	1.60	287.90	3,805.5	-1,059.0	281.0	194.9	-276.0	0.13	0.11	-2.33
3,921.0	1.70	286.70	3,894.4	-970.1	281.7	192.4	-276.8	0.12	0.11	-1.35
4,011.0	1.40	206.00	3,984.4	-880.1	281.1	190.7	-276.2	2.24	-0.33	-89.67
4,101.0	1.70	200.80	4,074.4	-790.1	278.9	189.7	-274.0	0.37	0.33	-5.78
4,191.0	1.60	189.60	4,164.3	-700.2	276.4	189.0	-271.6	0.37	-0.11	-12.44
4,281.0	1.80	178.70	4,254.3	-610.2	273.7	188.8	-268.9	0.42	0.22	-12.11
4,370.0	0.60	326.60	4,343.3	-521.2	272.7	188.6	-267.9	2.62	-1.35	166.18
4,460.0	0.80	324.50	4,433.3	-431.2	273.6	188.0	-268.8	0.22	0.22	-2.33
4,550.0	0.90	320.30	4,523.3	-341.2	274.7	187.2	-269.9	0.13	0.11	-4.67
4,639.0	0.80	334.40	4,612.3	-252.2	275.8	186.5	-271.0	0.26	-0.11	15.84
4,729.0	0.40	346.00	4,702.3	-162.2	276.7	186.1	-271.9	0.46	-0.44	12.89
4,819.0	1.20	130.90	4,792.2	-72.3	276.4	186.8	-271.6	1.72	0.89	161.00
4,909.0	1.00	128.40	4,882.2	17.7	275.2	188.1	-270.4	0.23	-0.22	-2.78
4,998.0	0.90	122.70	4,971.2	106.7	274.4	189.3	-269.5	0.15	-0.11	-6.40
5,088.0	1.10	154.40	5,061.2	196.7	273.2	190.2	-268.4	0.64	0.22	35.22
5,178.0	1.40	161.40	5,151.2	286.7	271.4	191.0	-266.5	0.37	0.33	7.78
5,268.0	1.20	178.90	5,241.2	376.7	269.4	191.3	-264.5	0.49	-0.22	19.44
5,358.0	0.70	108.60	5,331.2	466.7	268.3	191.9	-263.4	1.30	-0.56	-78.11
5,448.0	0.40	147.80	5,421.1	556.6	267.9	192.6	-262.9	0.52	-0.33	43.56
5,537.0	0.30	265.40	5,510.1	645.6	267.6	192.5	-262.7	0.68	-0.11	132.13
5,627.0	0.70	236.80	5,600.1	735.6	267.3	191.8	-262.4	0.51	0.44	-31.78
5,717.0	1.00	161.90	5,690.1	825.6	266.2	191.6	-261.3	1.18	0.33	-83.22
5,807.0	1.40	107.70	5,780.1	915.6	265.1	192.9	-260.2	1.28	0.44	-60.22

Survey Report



Company:	PDC ENERGY	Local Co-ordinate Reference:	Well HONEBEIN 7K-223
Project:	WELD COUNTY, COLORADO	TVD Reference:	KB @ 4864.5usft (ENS 123)
Site:	NE SW SEC. 7 T4N R64W 6th P.M.	MD Reference:	KB @ 4864.5usft (ENS 123)
Well:	HONEBEIN 7K-223	North Reference:	True
Wellbore:	JOB # 2015-69-123	Survey Calculation Method:	Minimum Curvature
Design:	FINAL SURVEYS	Database:	EDM 5000.1 Single User Db

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)
5,897.0	1.20	106.80	5,870.1	1,005.6	264.5	194.8	-259.5	0.22	-0.22	-1.00
5,986.0	1.00	98.20	5,959.1	1,094.6	264.1	196.5	-259.1	0.29	-0.22	-9.66
6,076.0	1.10	108.90	6,049.1	1,184.6	263.8	198.1	-258.7	0.24	0.11	11.89
6,166.0	1.10	113.50	6,139.0	1,274.5	263.1	199.7	-258.0	0.10	0.00	5.11
KOP										
6,243.0	2.02	151.74	6,216.0	1,351.5	261.6	201.0	-256.5	1.74	1.19	49.66
6,255.0	2.20	154.50	6,228.0	1,363.5	261.2	201.2	-256.1	1.74	1.52	23.04
6,345.0	9.20	172.00	6,317.5	1,453.0	252.6	203.0	-247.4	7.92	7.78	19.44
6,435.0	17.30	172.60	6,405.0	1,540.5	232.1	205.7	-226.9	9.00	9.00	0.67
6,524.0	22.80	175.80	6,488.6	1,624.1	201.8	208.7	-196.5	6.30	6.18	3.60
6,614.0	28.10	178.50	6,569.9	1,705.4	163.2	210.5	-157.8	6.03	5.89	3.00
6,704.0	32.40	186.90	6,647.6	1,783.1	118.0	208.2	-112.7	6.69	4.78	9.33
6,794.0	42.00	190.20	6,719.2	1,854.7	64.3	199.9	-59.3	10.89	10.67	3.67
6,883.0	49.90	191.30	6,781.1	1,916.6	1.5	187.9	3.2	8.92	8.88	1.24
6,973.0	55.60	187.50	6,835.5	1,971.0	-69.1	176.3	73.5	7.17	6.33	-4.22
7,063.0	60.00	182.70	6,883.5	2,019.0	-144.9	169.6	149.2	6.65	4.89	-5.33
7,153.0	67.70	182.60	6,923.1	2,058.6	-225.6	165.9	229.7	8.56	8.56	-0.11
7,242.0	75.70	177.20	6,951.1	2,086.6	-310.0	166.2	314.0	10.67	8.99	-6.07
7,332.0	81.40	175.40	6,968.9	2,104.4	-398.0	171.9	402.1	6.63	6.33	-2.00
7,375.0	82.60	174.40	6,974.9	2,110.4	-440.4	175.6	444.6	3.62	2.79	-2.33
ICP										
7,401.0	85.08	174.70	6,977.7	2,113.2	-466.1	178.1	470.4	9.61	9.55	1.14
7,419.0	86.80	174.90	6,979.0	2,114.5	-484.0	179.7	488.3	9.61	9.55	1.13
7,509.0	88.90	175.80	6,982.4	2,117.9	-573.6	187.0	578.1	2.54	2.33	1.00
7,599.0	89.50	174.40	6,983.6	2,119.1	-663.3	194.7	668.0	1.69	0.67	-1.56
7,689.0	93.10	174.30	6,981.6	2,117.1	-752.8	203.6	757.7	4.00	4.00	-0.11
7,778.0	90.80	176.60	6,978.5	2,114.0	-841.5	210.6	846.5	3.65	-2.58	2.58
7,872.0	90.60	179.10	6,977.4	2,112.9	-935.4	214.1	940.5	2.67	-0.21	2.66
7,965.0	91.00	181.30	6,976.1	2,111.6	-1,028.4	213.8	1,033.4	2.40	0.43	2.37
8,059.0	91.20	181.60	6,974.3	2,109.8	-1,122.3	211.4	1,127.3	0.38	0.21	0.32
8,152.0	91.60	181.00	6,972.0	2,107.5	-1,215.3	209.3	1,220.1	0.78	0.43	-0.65
8,246.0	90.30	180.10	6,970.5	2,106.0	-1,309.2	208.4	1,314.1	1.68	-1.38	-0.96
8,339.0	90.60	180.30	6,969.7	2,105.2	-1,402.2	208.1	1,407.0	0.39	0.32	0.22
8,433.0	91.00	180.10	6,968.4	2,103.9	-1,496.2	207.8	1,501.0	0.48	0.43	-0.21
8,526.0	91.60	178.50	6,966.3	2,101.8	-1,589.2	208.9	1,593.9	1.84	0.65	-1.72
8,620.0	91.30	179.20	6,963.9	2,099.4	-1,683.1	210.8	1,687.9	0.81	-0.32	0.74
8,713.0	90.60	181.80	6,962.4	2,097.9	-1,776.1	210.0	1,780.8	2.89	-0.75	2.80
8,807.0	91.80	181.90	6,960.4	2,095.9	-1,870.0	207.0	1,874.7	1.28	1.28	0.11
8,900.0	92.10	180.10	6,957.3	2,092.8	-1,963.0	205.3	1,967.5	1.96	0.32	-1.94
8,994.0	91.60	179.60	6,954.2	2,089.7	-2,056.9	205.6	2,061.4	0.75	-0.53	-0.53
9,087.0	90.70	180.70	6,952.4	2,087.9	-2,149.9	205.3	2,154.4	1.53	-0.97	1.18
9,181.0	90.60	180.60	6,951.3	2,086.8	-2,243.9	204.3	2,248.3	0.15	-0.11	-0.11
9,274.0	90.90	178.90	6,950.1	2,085.6	-2,336.9	204.7	2,341.3	1.86	0.32	-1.83
9,368.0	89.70	182.20	6,949.6	2,085.1	-2,430.9	203.8	2,435.2	3.74	-1.28	3.51
9,461.0	90.10	180.10	6,949.7	2,085.2	-2,523.8	201.9	2,528.1	2.30	0.43	-2.26
9,555.0	88.80	180.10	6,950.6	2,086.1	-2,617.8	201.7	2,622.1	1.38	-1.38	0.00
9,648.0	88.40	179.60	6,952.9	2,088.4	-2,710.8	202.0	2,715.0	0.69	-0.43	-0.54
9,738.0	89.30	180.70	6,954.7	2,090.2	-2,800.8	201.7	2,805.0	1.58	1.00	1.22
9,828.0	89.20	178.60	6,955.9	2,091.4	-2,890.8	202.3	2,894.9	2.34	-0.11	-2.33
9,918.0	90.10	181.20	6,956.5	2,092.0	-2,980.8	202.5	2,984.9	3.06	1.00	2.89
10,008.0	91.00	183.00	6,955.6	2,091.1	-3,070.7	199.2	3,074.7	2.24	1.00	2.00
10,097.0	90.50	182.30	6,954.4	2,089.9	-3,159.6	195.0	3,163.5	0.97	-0.56	-0.79
10,187.0	91.50	183.10	6,952.9	2,088.4	-3,249.5	190.8	3,253.2	1.42	1.11	0.89

Survey Report



Company:	PDC ENERGY	Local Co-ordinate Reference:	Well HONEBEIN 7K-223
Project:	WELD COUNTY, COLORADO	TVD Reference:	KB @ 4864.5usft (ENS 123)
Site:	NE SW SEC. 7 T4N R64W 6th P.M.	MD Reference:	KB @ 4864.5usft (ENS 123)
Well:	HONEBEIN 7K-223	North Reference:	True
Wellbore:	JOB # 2015-69-123	Survey Calculation Method:	Minimum Curvature
Design:	FINAL SURVEYS	Database:	EDM 5000.1 Single User Db

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)
10,276.0	90.90	182.50	6,951.0	2,086.5	-3,338.3	186.5	3,342.0	0.95	-0.67	-0.67
10,366.0	90.90	181.70	6,949.6	2,085.1	-3,428.3	183.2	3,431.8	0.89	0.00	-0.89
10,455.0	91.80	182.30	6,947.5	2,083.0	-3,517.2	180.1	3,520.6	1.22	1.01	0.67
10,544.0	93.60	181.20	6,943.3	2,078.8	-3,606.0	177.3	3,609.4	2.37	2.02	-1.24
10,634.0	92.80	180.00	6,938.3	2,073.8	-3,695.9	176.4	3,699.2	1.60	-0.89	-1.33
10,724.0	91.30	178.50	6,935.0	2,070.5	-3,785.8	177.6	3,789.1	2.36	-1.67	-1.67
10,813.0	91.20	177.80	6,933.1	2,068.6	-3,874.8	180.4	3,878.1	0.79	-0.11	-0.79
10,903.0	92.30	178.10	6,930.4	2,065.9	-3,964.7	183.7	3,968.0	1.27	1.22	0.33
10,993.0	92.40	180.40	6,926.7	2,062.2	-4,054.6	184.8	4,057.9	2.56	0.11	2.56
11,083.0	91.90	183.50	6,923.3	2,058.8	-4,144.4	181.8	4,147.7	3.49	-0.56	3.44
11,173.0	88.60	181.40	6,922.9	2,058.4	-4,234.3	177.9	4,237.5	4.35	-3.67	-2.33
11,263.0	86.20	183.10	6,927.0	2,062.5	-4,324.2	174.4	4,327.2	3.27	-2.67	1.89
11,353.0	88.50	182.80	6,931.1	2,066.6	-4,413.9	169.8	4,416.8	2.58	2.56	-0.33
11,443.0	88.50	182.80	6,933.5	2,069.0	-4,503.8	165.4	4,506.5	0.00	0.00	0.00
11,532.0	88.90	182.30	6,935.5	2,071.0	-4,592.7	161.4	4,595.3	0.72	0.45	-0.56
11,622.0	88.60	181.50	6,937.5	2,073.0	-4,682.6	158.4	4,685.1	0.95	-0.33	-0.89
11,712.0	88.60	182.20	6,939.7	2,075.2	-4,772.5	155.5	4,774.9	0.78	0.00	0.78
11,802.0	88.50	178.30	6,942.0	2,077.5	-4,862.5	155.1	4,864.9	4.33	-0.11	-4.33
11,892.0	87.70	177.20	6,944.9	2,080.4	-4,952.4	158.7	4,954.8	1.51	-0.89	-1.22
11,982.0	88.20	178.10	6,948.2	2,083.7	-5,042.2	162.4	5,044.7	1.14	0.56	1.00
12,072.0	90.60	179.80	6,949.1	2,084.6	-5,132.2	164.0	5,134.7	3.27	2.67	1.89
12,162.0	90.40	178.10	6,948.3	2,083.8	-5,222.2	165.7	5,224.7	1.90	-0.22	-1.89
12,252.0	90.00	178.70	6,948.0	2,083.5	-5,312.2	168.2	5,314.7	0.80	-0.44	0.67
12,342.0	89.70	176.50	6,948.2	2,083.7	-5,402.1	171.9	5,404.7	2.47	-0.33	-2.44
12,432.0	90.30	176.50	6,948.2	2,083.7	-5,491.9	177.4	5,494.6	0.67	0.67	0.00
12,522.0	92.20	178.80	6,946.3	2,081.8	-5,581.8	181.1	5,584.6	3.31	2.11	2.56
12,611.0	93.00	176.40	6,942.2	2,077.7	-5,670.6	184.9	5,673.5	2.84	0.90	-2.70
12,701.0	91.10	177.70	6,939.0	2,074.5	-5,760.4	189.5	5,763.4	2.56	-2.11	1.44
12,791.0	91.20	178.00	6,937.2	2,072.7	-5,850.4	192.9	5,853.4	0.35	0.11	0.33
12,881.0	89.80	178.70	6,936.4	2,071.9	-5,940.3	195.4	5,943.3	1.74	-1.56	0.78
12,971.0	90.50	178.60	6,936.2	2,071.7	-6,030.3	197.6	6,033.3	0.79	0.78	-0.11
13,061.0	91.30	180.10	6,934.8	2,070.3	-6,120.3	198.6	6,123.3	1.89	0.89	1.67
13,151.0	91.40	178.70	6,932.7	2,068.2	-6,210.2	199.5	6,213.3	1.56	0.11	-1.56
13,241.0	92.20	179.80	6,929.8	2,065.3	-6,300.2	200.7	6,303.2	1.51	0.89	1.22
13,331.0	91.60	180.30	6,926.8	2,062.3	-6,390.1	200.6	6,393.1	0.87	-0.67	0.56
13,421.0	91.50	179.40	6,924.4	2,059.9	-6,480.1	200.9	6,483.1	1.01	-0.11	-1.00
13,510.0	92.20	181.00	6,921.5	2,057.0	-6,569.0	200.6	6,572.0	1.96	0.79	1.80
13,600.0	90.70	179.50	6,919.3	2,054.8	-6,659.0	200.2	6,661.9	2.36	-1.67	-1.67
13,690.0	91.00	179.10	6,917.9	2,053.4	-6,749.0	201.3	6,751.9	0.56	0.33	-0.44
13,780.0	90.90	178.90	6,916.4	2,051.9	-6,839.0	202.8	6,841.9	0.25	-0.11	-0.22
13,870.0	89.40	183.90	6,916.2	2,051.7	-6,928.9	200.6	6,931.8	5.80	-1.67	5.56
13,960.0	89.80	181.50	6,916.8	2,052.3	-7,018.8	196.4	7,021.5	2.70	0.44	-2.67
LAST SURVEY - JULY 28, 2015										
13,990.0	90.30	181.70	6,916.8	2,052.3	-7,048.8	195.6	7,051.5	1.80	1.67	0.67
EXTRAPOLATION TO TD										
14,045.0	90.30	181.70	6,916.5	2,052.0	-7,103.8	193.9	7,106.4	0.00	0.00	0.00

Survey Report



Company:	PDC ENERGY	Local Co-ordinate Reference:	Well HONEBEIN 7K-223
Project:	WELD COUNTY, COLORADO	TVD Reference:	KB @ 4864.5usft (ENS 123)
Site:	NE SW SEC. 7 T4N R64W 6th P.M.	MD Reference:	KB @ 4864.5usft (ENS 123)
Well:	HONEBEIN 7K-223	North Reference:	True
Wellbore:	JOB # 2015-69-123	Survey Calculation Method:	Minimum Curvature
Design:	FINAL SURVEYS	Database:	EDM 5000.1 Single User Db

Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
BHL - HONEBEIN 7K-22 - survey misses target center by 28.7usft at 11425.8usft MD (6933.0 TVD, -4486.7 N, 166.2 E) - Point	0.00	0.00	6,916.5	-4,488.2	189.6	1,358,372.57	3,251,944.83	40.313610	-104.596520
7" ICP *NEW* - HONEB - survey misses target center by 26.5usft at 7382.3usft MD (6975.8 TVD, -447.6 N, 176.3 E) - Point	0.00	0.00	6,973.8	-445.3	202.7	1,362,415.27	3,251,916.73	40.324708	-104.596473
EXIST VERT FARR #18 - survey misses target center by 990.0usft at 12547.3usft MD (6945.2 TVD, -5607.0 N, 181.8 E) - Circle (radius 30.0)	0.00	0.00	7,282.5	-5,661.3	-747.4	1,357,190.08	3,251,019.80	40.310390	-104.599880
HOW SAD C 18-31 - survey misses target center by 1791.4usft at 10487.1usft MD (6946.3 TVD, -3549.2 N, 178.9 E) - Circle (radius 30.0)	0.00	0.00	7,292.5	-3,511.9	-1,578.4	1,359,330.86	3,250,167.04	40.316290	-104.602860
BHL - HONEBEIN 7K-22 - survey misses target center by 15.8usft at 14045.0usft MD (6916.5 TVD, -7103.8 N, 193.9 E) - Point	0.00	0.00	6,913.0	-7,104.0	178.5	1,355,756.99	3,251,960.32	40.306430	-104.596560
7" ICP *NEW* - HONEB - survey misses target center by 13.3usft at 7384.0usft MD (6976.0 TVD, -449.2 N, 176.5 E) - Point	0.00	0.00	6,973.8	-448.2	189.6	1,362,412.24	3,251,903.66	40.324700	-104.596520
KOP - HONEBEIN 7K-2: - survey misses target center by 18.1usft at 6283.0usft MD (6255.9 TVD, 259.7 N, 201.7 E) - Point	0.00	0.00	6,257.6	277.4	205.3	1,363,137.93	3,251,911.98	40.326691	-104.596464
KOP - HONEBEIN 7K-2: - survey misses target center by 22.1usft at 6282.7usft MD (6255.7 TVD, 259.8 N, 201.7 E) - Point	0.00	0.00	6,257.7	278.1	189.6	1,363,138.47	3,251,896.27	40.326693	-104.596520
EXIST VERT FARR #2 - survey misses target center by 431.5usft at 12519.4usft MD (6946.4 TVD, -5579.2 N, 181.1 E) - Circle (radius 30.0)	0.00	0.00	7,260.5	-5,573.9	476.9	1,357,289.96	3,252,243.12	40.310630	-104.595490
EXIST VERT FARR C # - survey misses target center by 362.0usft at 13213.5usft MD (6930.8 TVD, -6272.7 N, 200.5 E) - Circle (radius 30.0)	0.00	0.00	7,199.5	-6,284.3	-41.8	1,356,574.35	3,251,731.66	40.308680	-104.597350
EXIST VERT FARR #18 - survey misses target center by 471.9usft at 14045.0usft MD (6916.5 TVD, -7103.8 N, 193.9 E) - Circle (radius 30.0)	0.00	0.00	7,263.5	-7,165.9	507.6	1,355,698.41	3,252,290.03	40.306260	-104.595380

Survey Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
907.0	907.0	1.5	-0.3	SURFACE CASING
6,243.0	6,216.0	261.6	201.0	KOP
7,401.0	6,977.7	-466.1	178.1	ICP
13,990.0	6,916.8	-7,048.8	195.6	LAST SURVEY - JULY 28, 2015
14,045.0	6,916.5	-7,103.8	193.9	EXTRAPOLATION TO TD

Checked By: _____ Approved By: _____ Date: _____