

EXTRACTION OIL & GAS

WELD COUNTY, COLORADO (NAD 83)

NE SE SEC. 7 T4N R68W 6th P.M.

BERTHOUD FARMS 8E-10-5C

JOB # 2017-522-88

13 December, 2017

Survey: FINAL SURVEYS - SURFACE





Project: WELD COUNTY, COLORADO (NAD 83)
Site: NE SE SEC. 7 T4N R68W 6th P.M.
Well: BERTHOUD FARMS 8E-10-5C
Wellbore: JOB # 2017-522-88
Design: SURFACE



ANNOTATIONS

TVD	MD	Inc	Azi	+N/-S	+E/-W	VSect	Departure	Annotation
1448.32	1481.00	21.62	17.70	233.50	63.01	241.82	243.06	LAST SURVEY DEC 12, 2017
1494.80	1531.00	21.62	17.70	251.05	68.61	260.24	261.48	EXTRAPOLATION TO TD - SURFACE

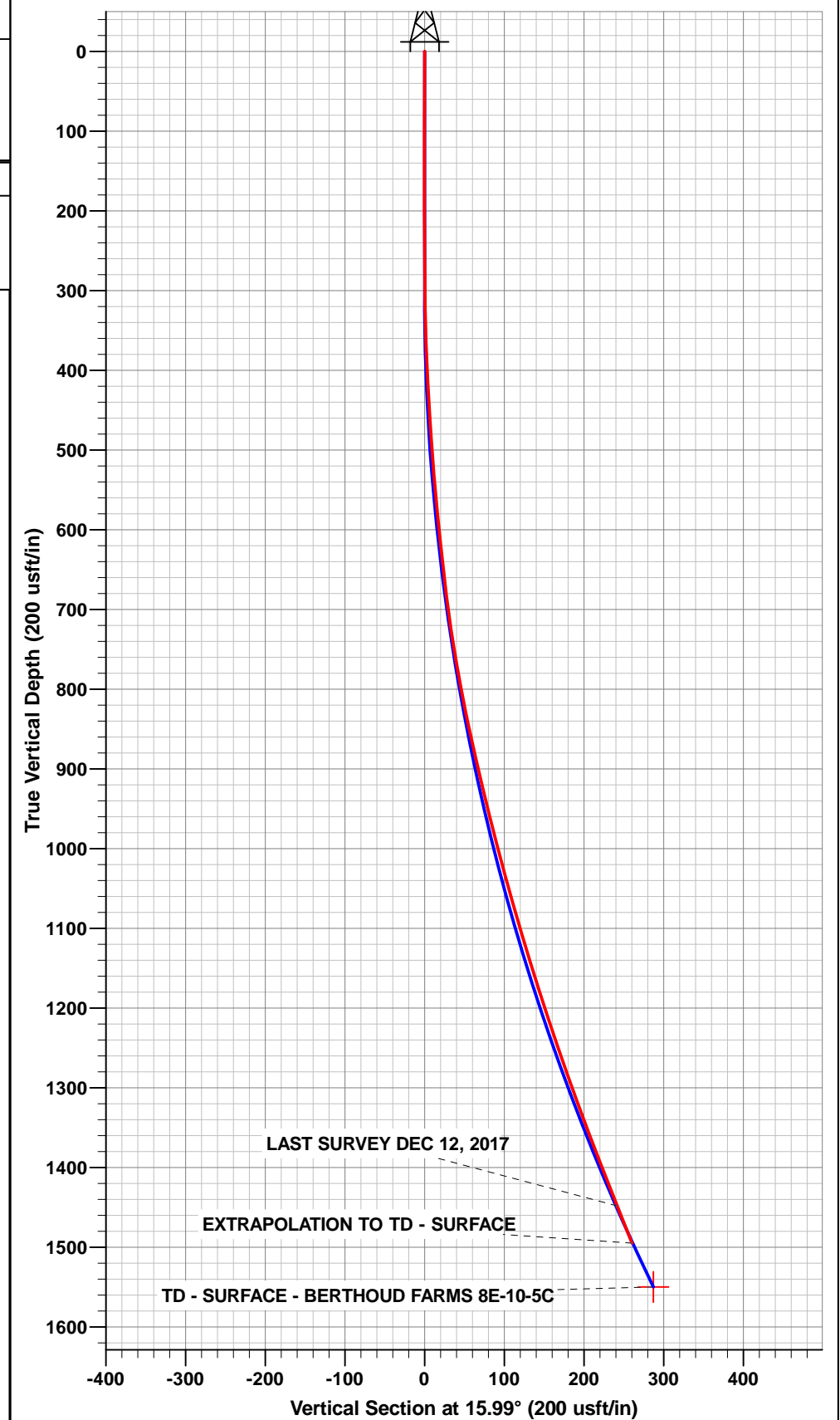
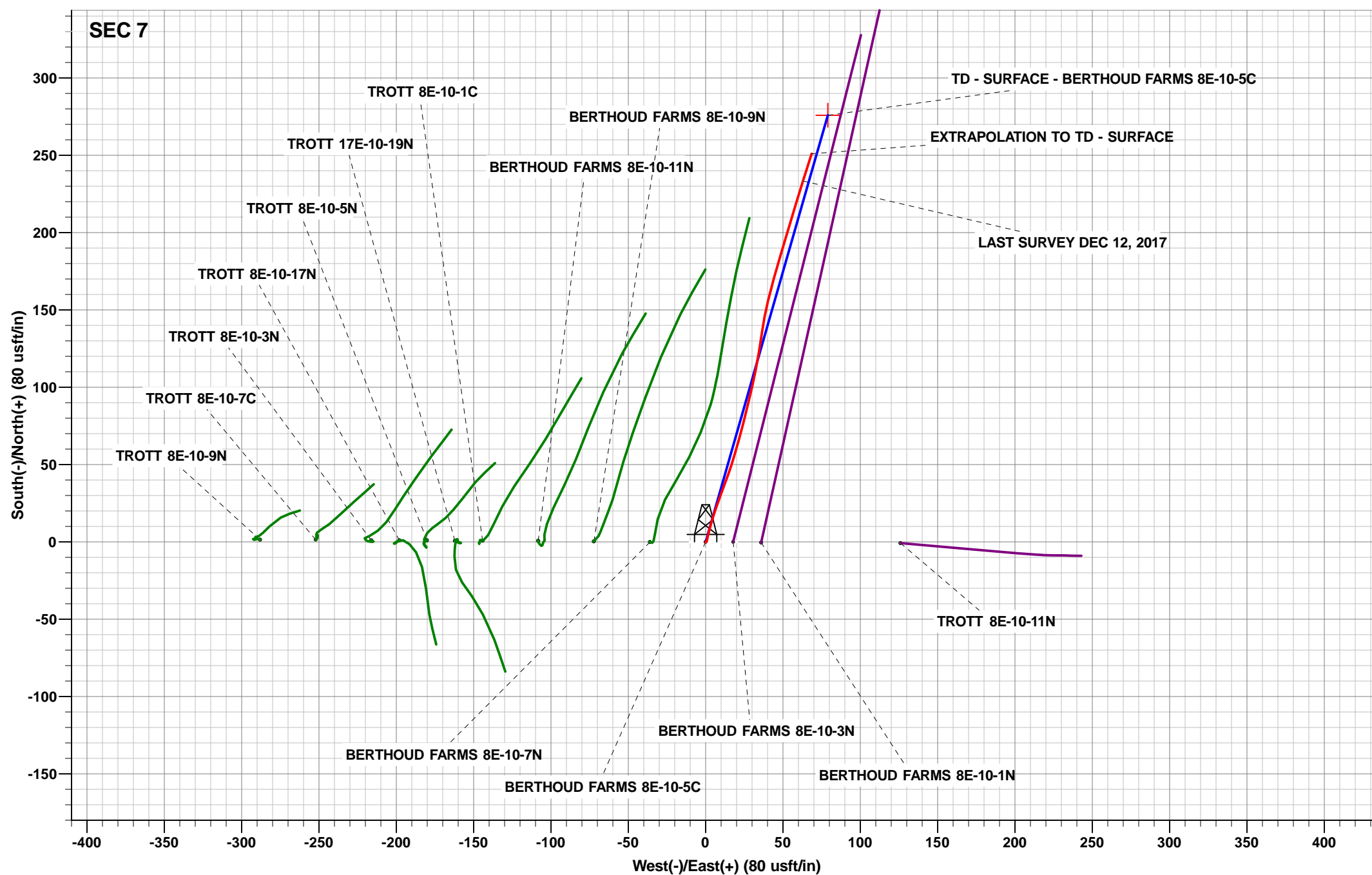
WELL DETAILS: BERTHOUD FARMS 8E-10-5C

+N/-S	+E/-W	Northing	Ground Level:	Easting	5033.00	Latitude	Longitude
0.00	0.00	1361363.20	3128228.00	40.324430		-105.040104	

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting
TD - SURFACE - BERTHOUD FARMS 8E-10-5C	1550.00	275.99	79.09	1361639.59	3128305.66

SEC 7



Survey Report



Company:	EXTRACTION OIL & GAS	Local Co-ordinate Reference:	Well BERTHOUD FARMS 8E-10-5C
Project:	WELD COUNTY, COLORADO (NAD 83)	TVD Reference:	KB (8') @ 5041.00usft (CARTEL 88)
Site:	NE SE SEC. 7 T4N R68W 6th P.M.	MD Reference:	KB (8') @ 5041.00usft (CARTEL 88)
Well:	BERTHOUD FARMS 8E-10-5C	North Reference:	True
Wellbore:	JOB # 2017-522-88	Survey Calculation Method:	Minimum Curvature
Design:	SURFACE	Database:	EDM 5000.1 Single User Db

Project	WELD COUNTY, COLORADO (NAD 83)		
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 SE SEC. 7 T4N R68W 6th P.M.				
Site Position:		Northing:	1,361,363.03 usft	Latitude:	40.324429
From:	Lat/Long	Easting:	3,128,263.97 usft	Longitude:	-105.039975
Position Uncertainty:	0.00 usft	Slot Radius:	1.10000 ft	Grid Convergence:	0.30 °

Well	BERTHOUD FARMS 8E-10-5C					
Well Position	+N/-S	0.00 usft	Northing:	1,361,363.20 usft	Latitude:	40.324430
	+E/-W	0.00 usft	Easting:	3,128,228.00 usft	Longitude:	-105.040104
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	5,033.00 usft

Wellbore	JOB # 2017-522-88				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	03/12/2017	8.30	66.74	52,269

Design	SURFACE				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	15.99	

Survey Program	Date	13/12/2017			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
105.00	1,531.00	FINAL SURVEYS - SURFACE (JOB # 201	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)
0.00	0.00	0.00	0.00	5,041.00	0.00	0.00	0.00	0.00	0.00	0.00
105.00	0.26	144.40	105.00	4,936.00	-0.19	0.14	-0.15	0.25	0.25	0.00
200.00	0.26	29.39	200.00	4,841.00	-0.18	0.37	-0.07	0.46	0.00	-121.06
296.00	0.40	34.14	296.00	4,745.00	0.29	0.66	0.46	0.15	0.15	4.95
390.00	2.55	13.05	389.96	4,651.04	2.59	1.32	2.86	2.32	2.29	-22.44
485.00	3.96	13.49	484.81	4,556.19	7.84	2.56	8.25	1.48	1.48	0.46
580.00	5.54	15.86	579.48	4,461.52	15.45	4.58	16.11	1.68	1.66	2.49
676.00	6.86	20.60	674.91	4,366.09	25.27	7.87	26.46	1.47	1.37	4.94
770.00	9.93	20.69	767.90	4,273.10	38.11	12.71	40.14	3.27	3.27	0.10
865.00	12.52	16.65	861.07	4,179.93	55.64	18.55	58.60	2.85	2.73	-4.25
960.00	13.84	14.36	953.57	4,087.43	76.52	24.32	80.25	1.49	1.39	-2.41
1,056.00	15.51	12.78	1,046.43	3,994.57	100.16	30.01	104.55	1.79	1.74	-1.65
1,183.00	17.67	8.21	1,168.14	3,872.86	135.80	36.52	140.61	1.99	1.70	-3.60

Survey Report



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Wellbore:	JOB # 2017-522-88	Survey Calculation Method:	Minimum Curvature
Design:	SURFACE	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)
1,247.00	18.68	13.40	1,228.95	3,812.05	155.39	40.28	160.47	2.98	1.58	8.11
1,342.00	20.13	16.91	1,318.56	3,722.44	185.83	48.56	192.02	1.96	1.53	3.69
1,437.00	21.40	16.56	1,407.39	3,633.61	218.08	58.26	225.69	1.34	1.34	-0.37
LAST SURVEY DEC 12, 2017										
1,481.00	21.62	17.70	1,448.32	3,592.68	233.50	63.01	241.82	1.07	0.50	2.59
EXTRAPOLATION TO TD - SURFACE										
1,531.00	21.62	17.70	1,494.80	3,546.20	251.05	68.61	260.24	0.00	0.00	0.00

Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
TD - SURFACE - BERTHOUD	0.00	0.00	1,550.00	275.99	79.09	1,361,639.59	3,128,305.66	40.325188	-105.039820
- survey misses target center by 61.47usft at 1531.00usft MD (1494.80 TVD, 251.05 N, 68.61 E)									
- Point									

Survey Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
1,481.00	1,448.32	233.50	63.01	LAST SURVEY DEC 12, 2017	
1,531.00	1,494.80	251.05	68.61	EXTRAPOLATION TO TD - SURFACE	

Checked By: _____ Approved By: _____ Date: _____